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TABLE OF CONTENTS 428
BUYERS' DIRECTORY 52

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INDIA RUBBER WORLD

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THE NEXT ISSUE OF

THE INDIA RUBBER WORLD

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Rubber Exhibition Number

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TRADES EXHIBITION AT OLYMPIA, LONDON

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TABLE OF CONTENTS ON LAST PAGE READING MATTER.

THIS MONTH AT OLYMPIA.

AT the London rubber congress this month the manufacturers of rubber goods will have an opportunity to meet a number of important producers of crude rubber—a fact which represents the most important step in progress made in connection with rubber for many years. It marks the beginning of direct relations between grower and consumer—the production of definite qualities of rubber on specifications—the establishment of a fixed reputation for the product of given estates, protected by registered trade marks—all of which are desirable. All of this will not happen at once, of course, but every business development must have a beginning before it can become general, and we look to many new things in rubber to date from the Olympia exhibition.

It is not so long since the arrival of crude rubber in market was so irregular and uncertain as to be almost a matter of chance. A sailing vessel would come in without warning, with consignments of rubber of which perhaps no advices had been given, and a broker went out and found buyers at what it would bring. That was the practice in America; in London a more stable tone was given to the market by the auction system, which still obtains. To-day shipments are more regular, and more prompt, steam hav-

ing succeeded sail, and the telegraph gives notice in advance of all details, making possible the systematic business which has grown up of rubber importing.

Still the buying of crude rubber has remained very much a lottery. The consumer and the producer have had no relation; even the importer or merchant, as a rule, have not come into contact with the producer, so that any attempt to fix rubber prices six months ahead was about as uncertain as a weather prophecy. The more advanced plantations in Malaya, for example, have now reached a position where, knowing the actual cost of production, and being able to guarantee quality, they could contract to supply rubber at a fixed price for any length of time, if they chose to do so. But even if such a system does not prevail in the near future, there are other advantages which may be expected to follow the closer acquaintance of planters and manufacturers, and of planters with the suppliers of plantation requisites, such as will be promoted by the International Rubber Exhibition.

The general public is likely to be benefited by the wider dissemination of facts about rubber, as a result of the exhibition, which ought to render more difficult the flotation of unsound companies. It is desirable that the public should invest in rubber, as in any other good business, and this new field of investment ought to be so safeguarded that none need be afraid to deal with it. This, evidently, is one of the objects of the exhibition at Olympia to which the management is applying itself, rather than any idea of making any profit from the exhibition as a business enterprise.

RAILWAYS IN AFRICA AND RUBBER.

THE rubber world has more than one reason for feeling interested over the activity in railway building in Africa which is being promoted by every European power having colonies on that continent. African railways already have made available large rubber areas which, otherwise, might yet be unproductive. Practically all the rubber exported from the Congo Free State is conveyed over the railway around the Congo Falls, which road has otherwise favorably affected the rubber interest by facilitating in so many ways the development of trade in the Congo rubber area. Similarly rubber trading has felt the beneficial effect of the railways in French West Africa and British East Africa. And it may be added that one of the incentives to the further construction of railways in the Congo State and of the Benguela line is the prospective profit from opening new rubber fields.

The carriage of rubber alone, however, in none of the regions indicated, would be sufficient to maintain a railway. But the promoters of these African roads are building for the future—to accommodate a traffic the development of which has barely begun. Just as,

in the western United States, prosperous millions now live in areas which were practically deserts before railways were projected through them, the hope is entertained that planting, farming, and grazing, as well as mining will be very largely developed in Africa, by or under the direction of white men, after the railways now planned shall have made more of the interior accessible.

Not the least promising hope in respect of the new Africa is that cotton will be produced there in large quantities. Already the adaptability for cotton growing of Lagos, Togo, and other colonies has been demonstrated—soil, climate, and native labor all included—but the lack of transportation facilities has been an insuperable obstacle. By the way, the fact that cotton growing has been attempted in so many parts of the world where it has not yet proved successful does not mean that cotton cannot yet be produced in them when they have been further developed through better transportation facilities. The world is using more cotton every year, and every increase in the amount produced is of interest, particularly if the rate of increase promises a lower level of cotton prices. It is possible that Africa as a cotton producing country will yet become as interesting to the rubber trade as it is now in the production of rubber.

Finally, the modernization of Africa in any respect whatever tends to increase the demand for rubber goods on that continent, and railways will tend, as nothing else can, to the new development.

A HELP TO BUSINESS.

WE have ever deprecated the idea of depending upon the government to create business. No matter how much international treaties may facilitate business by removing obstacles to intercourse, no treaty ever made sold a bushel of wheat or secured an order for a sewing machine. Mr. Blaine's pet scheme of reciprocity with the South American republics read well when written into the statutes but, as THE INDIA RUBBER WORLD pointed out at the time, it only afforded an opportunity for trade which our merchants might take advantage of or ignore as they saw fit, and before most of them seemed to recognize its existence the law became ineffective through a revision of the United States tariff which was the result of a political game played by people not interested in commerce and knowing nothing of South America.

The tariff has been much overrated as affecting international trade. Its actual service, in large part, has been as a safe basis for domestic political discussion just before elections—something over which people could be aroused sufficiently to keep them from forgetting to go to the polls. Regardless of high tariffs or low, some American firms have grown wealthy in

the export trade and more firms abroad have become wealthy by selling in the United States—even selling highly protected goods in towns where large factories were making competing goods.

Trade depends upon the merchant more than upon treaties and tariffs. Certainly the merchant who makes no attempt to secure orders abroad will not shine as an export merchant. But if he does engage in export trade he is supposed to wish to be qualified for it, and to be ready to make use of every agency that can be brought into his service. There is no inconsistency in our assertion that it is futile to depend upon the government to make business, and the suggestion that the government can be made use of in many ways to further business. The consular service, for example, can be made very helpful to commerce—not by the action of the government, necessarily, but by the use which the business world may make of the service.

From the earliest days that nations sent agents abroad to look after their seamen, vessels, and merchandise, the consular service, in one way or another, has been of definite advantage to commerce. To-day the scope of the service has broadened until consuls are engaged in advising their governments of every form of development and progress in the countries to which they are sent, and in pointing out opportunities for trade. It is true that the average consul not so long ago was just as apt as not to owe his appointment to his being a nuisance at home, and the idea prevailed that if he proved a nuisance in some out of the way foreign port the foreigners could do the worrying. But now the government, without regard to party politics, is seriously working to build up a consular service which shall be composed of men qualified for their work, who shall have an incentive to devote their best energies to it, with the idea that the interests of trade shall be promoted as far as possible.

The benefits derived, however, are measured by the degree of interest shown by our merchants and the effort made to take advantage of information gained by the consuls. We doubt whether it is generally known how valuable are the daily consular reports now printed at Washington, despite the fact that their contents are in such large part the result of accidental observations made by consuls, and often without an idea of what is actually wished for in business circles at home. Of course, the official representatives of the government cannot be sent to Brazil or Burma with samples and order book in hand to sell goods, but they can be informed as to what American goods are suited for those countries, or what classes of manufacturers are in a position to do business there, and utilize this knowledge in making their reports.

The ideal conditions would involve such relations between commercial associations and the government as would enable the consuls to make such reports that

no house having an interest in foreign trade would think of doing business without them. There are indications that sentiment at Washington is favorable to such a relation between business and the government. Steps have been taken to encourage business men to cooperate with the government in the improvement of the consular service. There are not a few consular officers who are working earnestly to improve the service, and we doubt not that if business men more generally signified an interest in such matters the consular reports would be still further improved.

An indication of progress worth noting here is that some capitalists have responded freely to a call for funds for founding a chair in a school at Washington for the training of men for consular work, and it is encouraging to see that the daily press has commented favorably upon the movement.

THE MODERNIZATION OF RUSSIA.

SOME of our exchanges have devoted considerable space of late to discussing the question whether a certain Russian firm in the rubber trade has been "bought" by another and larger firm. After all that has been said it would appear that the smaller concern has not been "sold" to the larger, the proof of which is that the founder of the firm—the man who gives name to it—is still doing business at the old stand. If he had sold out his business he would not now occupy the old desk or still be "bossing" the office staff.

All this discussion may appear to some minds much ado about nothing, but, after all, it is just as well to get at the facts about such matters. What has happened in Russia is a "merger" of important rubber interests. A, B, and C, each with an established position in the trade, each doing some one thing better than anybody else, agree not to waste energy by each trying to excel in every department—not to try to get more business by killing off the others—but to come to an understanding whereby each will be free to develop to the utmost the specialty for which it is best fitted. Actuated by this spirit, each concern helps all the others, with the idea that the total resulting profit will be larger than the aggregate in the past, without necessarily placing any new burden upon the consumers. Nobody's business has been "bought" or "sold"; former competitors have ceased to try to kill each other, but are working together for the general good of the trade, with the idea that what is best for the whole will benefit each and every unit of which it is composed.

Russia is not the first country in which rubber manufacturing companies have "merged," and we take it that the principle involved there is the same as elsewhere in matters of this kind. If it isn't, the industry will go to pot, giving an opportunity for new concerns, based upon a better foundation, to occupy the field. Meanwhile there is no reason for worry; what the people want is

good goloshes at fair prices, without regard to whether this or that shop has been "bought" or "sold."

FURTHER EVIDENCE OF THE GROWTH OF BERLIN, as well as of the disposition of the biggest cities everywhere to attract to themselves the lion's share of what is good in their respective countries, is to be seen in the removal to the German imperial capital of the estimable *Gummi-Zeitung*, so long identified with Dresden.

THE USE OF THE WORD "RUBBER" apparently is becoming more general among Dutch speaking people, whatever may be true elsewhere. In the editorial pages of Hollandish journals, and in their advertisements as well, "rubber" appears without any explanation or excuse. Why shouldn't it? Rubber is no more a foreign word there than "caoutchouc," while the use of the shorter word puts one in touch with a greater share of the world's population than caoutchouc or any other synonym. Even if the word is followed by *maatschappij* or *Tentoonstelling*, the use of "rubber" is an indication of progress which should be welcomed.

ALL THE NEWS CANNOT BE GOOD NEWS, even in the best newspaper. At least all cannot be pleasant news. On another page is a report of the indictment of two officers of what purported to be a rubber plantation company, charged with gross misrepresentations made in order to attract investors. We have no comment to make beyond noting that some fraudulent concerns spring up in every business, and to say that their worst feature is that they appeal to that class of the population who can least afford to be swindled. The prospectus of the company referred to offered shares, or "bonds," at \$300, to be paid for in installments during five years, the investor meanwhile to be entitled to dividends aggregating \$382. In other words, you get the bonds for nothing, plus \$82 in cash, after which you are, without any further payment, a full pledged shareholder in a rubber plantation yielding profits so vast—well, the figures are not fit to print! Of course, no business man was ever asked to buy such stocks, and it may be "good news" after all that the government attempts to protect the weak-minded by assuming that such prospectuses are necessarily dishonest.

VIEWS ON PLANTATION RUBBER.

A MEMBER of the rubber trade who has been looking into the use in the United States of Eastern plantation, sends THE INDIA RUBBER WORLD a note to the effect that two concerns in the insulated wire trade "would be glad to use it all the time if regular supplies could be obtained." From the rate at which the new grade of rubber is coming forward, however, it would appear that no fear need be entertained in respect of the matter of supplies. Regarding a large rubber shoe manufactory, THE INDIA RUBBER WORLD's informant remarks that "they do not care to pay the premium over South American rubber" to obtain the Ceylon product. A mechanical rubber goods company is quoted as stating that at one time they used a good deal, "but the manufactured goods did not last well." Still the consumption of plantation rubber keeps pace with the production.

A RUBBER REINFORCER.

NOT a substitute, or an adulterant, but a "reinforcer," is what George Watkinson calls "M. R." hydrocarbon, and he proves it. He got his facts through many experiments in which he took a great variety of rubber compounds, added a pound of M. R. hydrocarbon to it and got a result infinitely stronger and much cheaper. He now finds himself in a position where the trade at large are coming to his way of thinking, and it looks as if M. R. would shortly be ranked among the most notable and staple of the rubber assistants.

THE AMAZON RUBBER MOVEMENT.

THE exports of crude rubber from the Amazon region during the crop season ending June 30 were smaller than for the preceding year by some 1,690 tons, though otherwise the largest on record. The Amazon rubber exports as taken into account at Pará may be classed as follows, Pará being credited with the quantities actually shipped from there, no matter where produced. The remaining quantities were shipped direct from Manáos, Serpa and Iquitos, via Pará, to Europe or New York:

[The Figures Indicate Weight in Kilograms.]

SHIPPED FROM	New York.	Europe.	Total.
Pará	7,654,370	8,929,891	16,584,270
Manáos and Serpa.....	6,957,687	10,377,364	17,335,051
Iquitos	43,195	2,470,403	2,513,598
Total.....	14,655,261	21,777,658	36,432,919

The shipments credited to Pará this year are proportionately smaller than last year, which would indicate that a smaller share of the Acre product went to Pará for export, being handled instead at Manáos.

The rubber is classed as to grades as follows:

GRADES.	New York.	Europe.	Total.
Fine	7,085,285	11,571,600	18,656,885
Medium	1,512,737	1,623,205	3,135,942
Coarse	4,369,887	3,455,442	7,825,329
Total	1,687,352	5,127,411	6,714,763

Total..... 14,655,261 21,777,658 36,432,919

The actual exports from Manáos and Iquitos between July 1, 1907, and June 30, 1908, differ slightly, of course, from the shipments from Manáos and beyond actually passing Pará between those dates, since several days are consumed in river transit. The destination of these shipments was as follows:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York.....kilos	3,787,853	877,485	1,266,683	1,019,923	6,951,944
Liverpool.....	3,748,570	858,194	1,370,197	2,701,330	8,678,300
Havre-Hamburg	2,398,809	194,992	1,140,554	1,013,281	4,047,636
Total	9,935,232	1,930,671	3,077,434	4,734,543	19,677,880

Manáos shipments include the products of Amazonas state, part of the Acre territory product, and rubber in transit from Peru, Bolivia and Venezuela. The details of Iquitos (Peru) rubber passing Manáos were:

Fine	989,485
Medium	150,975
Coarse	441,818
Caucho	931,210

Total..... 2,513,488

This rubber probably shows a large proportion of "medium" on being regraded in the consuming markets.

THE YEAR'S ARRIVALS AT PARÁ.

The figures which follow relate, not to exports, as do the preceding figures, but to all the arrivals at Pará during the crop year 1907-08:

SOURCE.	Rubber.	Caucho.	Total.
Rio Purus	3,664	658	4,322
Rio Jurua	1,028	129	1,157
Rio Madeira	873	225	1,098
Manáos	68	6	74
Manáos, transit	13,155	4,175	17,330
Rio Tapajós	941	103	1,044
Rios Xingú-Jary	859	57	916
Islands	5,504	...	5,504
Cametá	2,000	...	2,000
Rio Tocantins .....	...	684	684
Peru	1,077	1,448	2,525
Total	29,169	7,485	36,654

F. W. CLEMENTS, of Melbourne, points out in London *Electrical Review* that the soiling of electric wires in household use is a source of short circuiting, as the ammonia thus set free dissolves the rubber insulation.

INDIA-RUBBER GOODS IN COMMERCE

EXPORTS FROM THE UNITED STATES.

THE following is an official statement of value of exports of manufactures of india-rubber and gutta-percha from the United States for ten fiscal years, ending June 30:

YEARS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
1907-08.....	\$1,347,775	\$1,614,290	\$3,743,040	\$6,705,105
1906-07.....	1,253,369	1,231,898	3,729,643	6,214,910
1905-06.....	1,221,159	1,505,082	2,966,144	5,692,385
1904-05.....	994,100	1,214,342	2,572,375	4,780,817
1903-04.....	879,476	1,086,364	2,469,750	4,435,590
1902-03.....	819,985	1,056,491	2,299,875	4,176,351
1901-02.....	634,146	1,046,315	1,781,941	3,462,402
1900-01.....	565,726	724,015	1,727,527	3,017,268
1899-00.....	541,830	420,746	1,405,212	2,367,788
1898-99.....	(a)	260,886	1,504,499	1,765,385

[a—Included in "All Other Rubber."]

SHIPMENTS TO NON-CONTIGUOUS COUNTRIES.

For the fiscal year ended June 30, 1908:

TERRITORIES.	Belting Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
Alaska	\$76,977	\$212,260	\$23,602	\$312,839
Hawaii	45,327	12,426	68,248	126,001
Porto Rico	7,930	1,219	43,553	52,702
Philippines	32,368	9,139	82,398	123,905
Total	\$162,602	\$235,044	\$217,801	\$615,447

BRAZILIAN IMPORTS OF RUBBER GOODS.

OFFICIAL statement of values (in milreis), during five calendar year. [These figures doubtless fail to include many articles embracing more or less rubber, but classified under other headings than manufactures of rubber.]

FROM—	1903.	1904.	1905.	1906.	1907.
Germany	873,250	797,664	657,826	581,451	508,902
United States	150,226	156,639	127,842	123,903	189,711
France	289,371	275,602	271,886	240,161	242,095
Great Britain	767,308	714,016	800,835	680,811	584,121
Italy	189,872	218,164	252,156	136,501	95,425
Other countries	104,237	118,677	93,837	48,110	55,496
Total.....	2,374,823	2,280,762	2,205,382	1,810,937	1,675,750

Equivalent with exchange at 12 pence for the first two years, and about 15½ pence in 1905, 1906, and 1907:

	1903.	1904.	1905.	1906.	1907.
U. S. gold	\$577,853.81	\$554,966.41	\$693,140.00	\$596,161.50	\$526,679.40
Sterling	£118,741.35	£114,038.28	£142,430.88	£116,955	£108,225.108

The Brazilian figures, as might be expected, do not correspond with the statistics of other countries of rubber exports to Brazil, owing, if for no other reason, to differences in classification. The United States report rubber goods exports to Brazil during six fiscal years (ending June 30), in value as follows:

1901-02	\$17,922	1904-05	\$51,332
1902-03	27,797	1905-06	42,080
1903-04	29,419	1906-07	56,012

THE rubber heel is now put on a good many welt shoes. The best way is to put them on by hand, as the machine will drive the nails crookedly and interfere with the heel trimming machine. Heeling machines can be used to nail on rubber heels, but to nail them on perfectly flat is yet an impossibility with the present makes of heeling machines. The rubber heel nailed on by machine will always be higher at the breast than at the rear of heel.—American Shoemaking.

UNLESS fire hose is likely to encounter a freezing temperature it is not necessary to perfectly drain the water out, as the rubber lining is not injured by dampness within, but on the contrary is benefited by remaining in a moist condition, and all rubber lined hose should have water passed through it at frequent intervals, to moisten the rubber.—Eureka Directions Concerning Hose.

The Guayule Rubber Situation.

AT no time and in no country has the production of crude rubber ever increased at such a rate as in Mexico since the exploitation of the guayule plant began there on a commercial scale. Mexican rubber has been known to commerce since the beginning of the rubber industry, and the Indians have continued year after year to carry to market the fruits of their robbery of the forest, but in recent years the amount of rubber from this source has not been considerable. In one year in the last decade—before plantations of *Castilloa* were formed—the total export of Mexican rubber was reported by the customs at 55,478 kilograms [=122,052 pounds]. During the calendar year 1907 the Mexican export of guayule rubber alone reached 11,487,678 pounds, while during the first half of 1908 the figure was 6,959,281 pounds, or at the rate of over 6300 metric tons a year. The Amazon region never produced so much rubber in a twelvemonth before 1870, and so much has never reached the Antwerp market in any one year. Mexico suddenly has come into second rank among the rubber producing countries, Brazil remaining first.

AS THE INDIA RUBBER WORLD has told, rubber from the guayule plant has long been known. A specimen of such rubber was shown at the Philadelphia Centennial Exhibition in 1876, and a manufacturer at New York imported a shipload of the shrub, from which he extracted good rubber. Many were the attempts, for some years, to utilize the new rubber, but generally by people with limited capital or lack of business acumen, so that only failure resulted. The really successful introduction of guayule rubber came with a rush—backed by ample capital to secure the coöperation of the most capable men in every department of the work to be done, from collecting the shrubs to selling the product to rubber factories. It was brought to the notice of possible users in a practical way, and really good qualities were demonstrated so clearly that a wide demand at once sprang up.

It may seem singular to some that, whereas business depression has prevailed in Mexico during a year past, the same as else-

where, the output of guayule rubber continues to grow. Not only this, but the shipments to the United States have increased steadily, although the whole world has been told of the slump in American financial conditions and of the consequent falling off in the consumption of rubber here. Official statistics do show, indeed, a reduced total importation of crude rubber into the United States, but more Mexican rubber than ever before, and Mexican rubber is for the most part guayule. Here are the latest figures from Washington—imports for three fiscal years, ending June 30, of crude rubber:

	1906.	1907.	1908.
Total imports.....pounds	57,884,345	76,963,838	62,233,160
From Mexico	1,705,915	7,175,097	9,209,443

We bought less rubber last year from Brazil, less from other South America and Central America, less from Europe, less from every country save Mexico. Has guayule rubber, then become so popular?

An explanation which has been offered is that conditions in Mexico have had more to do with the case than the demand for rubber in the United States. The guayule shrub is found upon *haciendas* owned by Mexican landed proprietors, usually on a vast scale. The method of acquiring the shrub has been its purchase from the owners of the land, or the securing of options or rights to gather guayule. In any event the Mexican has considered himself entitled, under the contracts, to a regular revenue—so much per month or year. And this revenue must be paid, regardless of whether or not the guayule is collected, the factories work, or the rubber finds a market.

Since not every guayule company has been in a financial position to permit of paying the landowners and allowing the shrub to remain on the soil until wanted, the work of collection has gone on just as if there had been no panic. In fact, the financial depression made the shrub owners more insistent upon having



AN EXPANSE OF GUAYULE LAND.



A BALE OF GUAYULE SHRUB.

the money their contracts called for. At the same time some of the guayule companies, in order to meet this pressure, were obliged to turn their shrub to account as speedily as possible, and throw the product upon the market, whether prices were favorable or otherwise. This has not been true of all the companies, but the condition has been general enough to explain, in part at least, why the producers of guayule rubber have been so busy, in the face of a falling market, and why the American rubber market has taken guayule more freely than other kinds of rubber.

It may be of interest to note that a single guayule company has paid \$300,000 (gold) to one hacienda proprietor for guayule shrub which is not to be gathered until wanted, and smaller amounts to several other proprietors. Companies that are in this position, and not obliged to offer guayule rubber on a weak market, look forward to the time when the total supply of shrub will be greatly diminished, and when the price of guayule rubber, in consequence, will go up. It will be time then to utilize the shrub which they now are paying for in advance. They are confident that guayule rubber, having come into use so generally, and become known to every manufacturer, will find a definite place in the trade, for certain lines of work, at a price much above the present level.



FOUR HUNDRED TONS OF GUAYULE SHRUB.

[These bales vary in weight from 30 to 60 kilograms. That illustrated on the preceding page is much larger—probably 150 kilograms.]

It appears probable, after what has been said, that not a little guayule rubber is being held out of consumption. On the other hand, it is finding new uses. It is displacing reclaimed rubber to an extent noted already in these pages. Again, some of it has been utilized, after having been "deresinated," in the place of higher grades of rubber, which the manufacturer is thus not obliged to buy.

The table which follows has been compiled for THE INDIA RUBBER WORLD from Mexican official records. It shows the total exports of rubber for 20 fiscal years, ending June 30. Formerly only wild *Castilloa* rubber was exported, the shipments of which, in later years, probably have not increased any. The increase in efforts is due, first, to the development of *Castilloa* plantations [see THE INDIA RUBBER WORLD, July 1, 1908—page 325], and, secondly, to the large output of guayule rubber.

RUBBER EXPORTS FROM MEXICO.

	Pounds.		Pounds.
1888-89.....	289,261	1898-99.....	421,494
1889-90.....	300,685	1899-1900.....	572,385
1890-91.....	202,951	1900-01.....	415,906
1891-92.....	141,203	1901-02.....	396,799
1892-93.....	122,052	1902-03.....	428,749
1893-94.....	168,026	1903-04.....	677,758
1894-95.....	189,169	1904-05.....	1,095,169

1895-96.....	182,474	1905-06.....	3,190,548
1896-97.....	142,655	1906-07.....	10,321,247
1897-98.....	192,324	1907-08.....	10,106,100

[a—Ten months ending April 30.]

While on the subject of statistics, space may be given to this unofficial estimate of the exports of guayule rubber from Mexico for the last calendar year and for the first half of 1908, showing the relative proportions taken by the United States and Europe. The preceding table, it will be noticed, takes account of fiscal years. The statement runs:

	United States.	Europe.	Total.
January-December, 1907.....	pounds 9,400,000	2,500,000	11,900,000
January-June, 1908.....	6,980,000	1,830,000	8,910,000

There is one class of exports not embraced in the preceding figures—guayule shrub sent abroad to be utilized. To this class belong the entries into the United States, at Corpus Christi, Texas, reported as follows:

	Pounds.	Value.
Twelve months to June 30, 1908.....	1,187,596	\$24,613
Nine months to March 31, 1908.....	1,172,309	22,614

It will be seen that the average price at which such imports are entered is in the neighborhood of 2 cents a pound. No import duty is assessed by the United States, but the shipment of guayule shrub from Mexico is discouraged by the assessment of a small export duty. A certain amount of guayule shrub is also exported to Germany.

NEW YORK PRICES FOR GUAYULE RUBBER.

[Reported in THE INDIA RUBBER WORLD at the dates below.]

1906.	February 1.....	44-45	December 1.....	30-31	
June 1.....	35-40	March 1.....	-48	1908.	
July 1.....	35-40	April 1.....	-48	January 1.....	32-33
August 1.....	39-45	May 1.....	-48	February 1.....	29-30
September 1.....	40-45	June 1.....	47-48	March 1.....	25-26
October 1.....	40-45	July 1.....	46-47	April 1.....	25-26
November 1.....	40-42½	August 1.....	45-48	May 1.....	29-30
December 1.....	44-45	September 1.....	45-48	June 1.....	29-30
1907.	October 1.....	44-45	July 1.....	26-27	
January 1.....	44-45	November 1.....	40-	August 1.....	25-26

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A Journey Through Guayule Land. By the Editor. THE INDIA RUBBER WORLD, March 1, 1907—page 173; April 1, 1907—page 205.
The Anatomical Structure of Guayule. By Alfred Dominikus. THE INDIA RUBBER WORLD, August 1, 1908—page 365.

MEXICAN GUAYULE PATENTS.

THE legal proceedings wherein Mr. William Magenau, general manager, and other employees of the National Rubber Co., at Gomez Palacio, Mexico, were charged with the infringement of patents granted to Ferdinand Ephraim, for the extraction of rubber from the guayule plant, seem to have been terminated definitely. The supreme court of Mexico has confirmed the judgment of the federal district judge at Durango, declaring the proceedings of the court of first instance at Lerdo, in the case of Ephraim vs. Magenau, to have been contrary to law and justice. The *Mexican Herald* contains this comment: "These men [Magenau et al.] are completely exonerated from the charges, and the fact established that their company, as well as several others of the most important rubber factories in the country, using a similar process, are entirely within their rights, and will in future be secure from prosecutions of this nature."

The defense was that the processes in use in guayule extraction have been developed in entire independence of the Ephraim patents. Ephraim, who lived formerly in California, is stated to have left Mexico.

SUIT has been filed against the Todd Rubber Co. (New Haven Connecticut), in the United States circuit court at Hartford, by the Parsons Non-Skid Co. (London), and the Weed Chain Tire Grip Co. (New York), alleging infringement of a tire chain patent.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

REFERENCE is made by the Editor in the July issue of THE INDIA RUBBER WORLD to the very limited use of turpentine in the trade now-a-days. A few barrels a year in certain varnishes evidently is the extent of its application, in spite of what has been said by non-technical writers on the

TURPENTINE AND THE RESIN INDUSTRY.

rubber industry. Of course, in the very early days of the industry it was different, turpentine being largely employed by Hancock as a solvent. I think if an actual account could be obtained of the turpentine used in British rubber works to-day the Editor's estimate would be somewhat, though not largely, exceeded. For certain manufactures where the goods are not subsequently vulcanized the solvent used is turpentine, the formula having remained in use since Hancock's time. This is the case at any rate with one firm of standing; I have no knowledge as to whether the practice is general or not. The inquiry as to the use of turpentine was put to the Editor by officials of the United States department of agriculture, which is engaged in standardizing and grading the products of the turpentine industry. I should think that a more important work is necessary—that is, the preservation of the future supply. A recent American book connected with the paint trade points out that the high price of turpentine is due to a growing scarcity owing to the falling of the trees, and it says that the time is not far distant when the paint trade will have to depend entirely upon benzine. I don't know how the increased production of turpentine in Russia, France and Spain will affect future supplies, but I should certainly think that when an article has doubled in price within a few years the country where it is mainly produced should take steps in the interests of future supply. Of course a good deal of benzine is used to-day as a turpentine substitute or adulterant, but its price seems destined to rise as the use of a less volatile spirit than petrol for motor cars becomes more general. The growing scarcity of petrol owing to the greatly increased demand has already led to the adoption of hydrocarbons of less volatility and the results are quite satisfactory. With the increase in the adoption of by-product coke ovens the production of naphtha is likely to show a great augmentation; at one of the largest iron works in England which I recently visited solvent naphtha was being produced as one of the coke oven by-products. There is no likelihood, however, of the price of solvent falling away, owing to overproduction, as it seems destined in the near future to find regular employment as a motor fuel.

A PATENT for an improved buffer, recently taken out by Mr. Christian H. Gray, of the Silvertown rubber works, has aroused

NEW BUFFER PATENT.

my interest. In order to obviate the disintegration and wear of the rubber in the ordinary buffer placed between two iron plates, Mr. Gray proposes to vulcanize the solid annular buffer to two brass plates which enclose it. Instead of brass a similar alloy or a brassed metal plate may be used. With regard to the improvement effected in a pure mechanical way I have nothing to say, but it seems to me rather curious that brass should be proposed in this connection. I may be quite wrong, but I should have thought that any copper alloy was dangerous in such close connection with rubber. I recently extracted quite a quantity of sulphide of copper from the outer layer of some vulcanized rubber which had rapidly decayed when used for a specific purpose. This was in no way connected with the patent I am referring to, of which, as I have already said, I have no knowledge or experience. It may be that a good deal depends upon the composition of the alloy; the term brass is very loosely used by engineers nowadays, and the same may be

said of gun metal which frequently contains no tin at all. On former occasions I have referred to the decrease in popularity of the rubber buffer. On locomotives it is now the general rule to use volute springs instead of the rubber buffer, and for carriage stock laminated springs of tempered steel are rapidly coming into favor.

I DON'T think it is going beyond the limits of this correspondence to make a brief reference to this now largely used con-

KENNEDY'S PATENT WATER METER.

trivance, because rubber forms an important item in its equipment. Besides the two rubber seatings or washers, a pure vulcanized rubber ring of 1 inch or ½ inch diameter is used to pack the movable vulcanite piston. These meters are now being largely adopted where a water rate is levied on workshops and factories by urban authorities. They are manufactured by Messrs. Glenfield & Kennedy, of Kilmarnock, Scotland, and when in use are, as a rule, the property of the water company or urban authority whose officials keep them under supervision. Reliability of action has not always characterized the water meter of the past, but I hear nothing but satisfactory reports of the one under notice.

I HAD a chat recently with Mr. T. M. Orde, who has been spending a holiday in Northumberland, in which county his fam-

RUBBER IN TOBAGO.

ily has been well known for many generations. Mr. Orde is connected with the West Indian Rubber Plantation Syndicate, Limited, and is full of enthusiasm as to the prospects of the *Castilloa* trees under cultivation in Tobago. Hardly anything has been done in the West Indies it seems with the *Hevea*, it being considered the better policy to stick to the indigenous tree, which is expected to yield a first class rubber under proper conditions of tapping and preparation. Exactly what these conditions consist of by no means seem to be a general matter of agreement, and it is clear that much experimental work remains to be done. Mr. Orde is emphatic that over-tapping is being carried on in Ceylon, and that certain systems of tapping associated with well known names are not in the best interest of the plantations where they have been adopted. With regard to coagulation he expressed himself strongly in favor of the centrifugal machine, not in the form first proposed by Biffen, but after a method worked out by himself and associates in Tobago. The rubber so prepared and air dried has been valued by London brokers at a shade less than some of the best Ceylon qualities, but so far only very small lots have been put upon the market. With regard to the general planting situation it would seem that cocoa has been better business than rubber in the island, the price of the former reaching an unprecedented figure last year. This matter of cocoa I notice was referred to at the not very exhilarating meeting of the Kepitigalla Rubber Estates on July 27, the Ceylon planters, owing to climatic troubles, not having been able to benefit by the high prices which have ruled. There does not seem likely to be any increased amount of rubber coming forward from the native West India vine *Forsteronia floribunda*, or from the bramble *Cryptostegia* which is commonly met with in Tobago. Many large land owners in Trinidad and Jamaica are giving up the sugar business and going in for *Castilloa* planting.

THE difficulties which arose as to validity of title to its property when this company was first brought out seem now to have been satisfactorily settled, and the original lease and license have been largely extended. A prospectus for the subscription of 3,608 shares, the balance of the working capital, was is-

BRITISH GUIANA RUBBER CORPORATION.

sued at the end of July, the subscription being underwritten at a commission of 15 per cent. and an over-riding commission of a shilling per share. With the prospects of the substantial dividends foreshadowed in the prospectus one would hardly have thought it necessary for Messrs. J. H. Tredale & Co., the well-known energetic stock brokers of Liverpool, to enclose a circular letter in the prospectus advising all and sundry to apply at once for shares. Such a letter is a somewhat new departure in rubber prospectuses, though the additional figures it contains over and above what are given in the prospectus are interesting. For some time at any rate it is clear that the major income will be derived from balata rather than from rubber, either forest or plantation, and in the collection of balata the corporation is presumably at no disadvantage with those gatherers outside its concession, as collection under license is the rule in Guiana. It is stated that the corporation can deliver their sheet balata in London at an inclusive cost of a shilling and that the price of 25. 5d. per pound is being realized. According to statements from Ciudad Bolivar the collection in Venezuela is unprofitable if the London selling price falls appreciably below 2 shillings; but it would seem that the Guiana business could face a much lower price with equanimity.

As an addendum to what I said six months ago about motor transport investigation at Aldershot it is interesting to note that the War office, through the mechanical transport committee, have instituted a competition for light tractors. The trial is to take place in the Long Valley at Aldershot and the subject is looked upon in engineering circles as one of considerable importance. Whether it will be of interest to the motor tire manufacturers remains to be seen; as far as motor transport in the army has gone at present rubber tires have been limited to the lighter vehicles, such as ambulance wagons, but they are certainly applicable to the sort of tractor now to be investigated.

I HAVE received from this well-known firm of electrical cable manufacturers their annual calendar. This announcement may seem somewhat belated, but I may explain that the firm have adopted the procedure of dating their calendar from July 1 to June 30, with a detachable leaflet for each day. Although the firm make all sorts of rubber insulated cables they by no means limit themselves to this branch. In addition to the fibrous diatrine insulation, they also use bitumen as an insulator on the lines initiated by Callenders many years ago, but with their own modifications. One of the most modern and withal important applications of electricity is in connection with mining. As shaft and underground cables are frequently liable to get wet it is important that the insulation used should be absolutely waterproof, and for mining work I understand that Glovers recommend their bitumen insulation in preference to the fibrous insulation. In their patent solid three case bitumen cable the conductors are each separately insulated with bitumen compound, and after being laid together around a shaped central case of bitumen, the whole is sheathed over with a solid tube of bitumen which is forced on so as to completely fill up the interstices between the three cases. The cable is then lapped and armored as required. This class of cable seems to have given every satisfaction for pressures up to 3,000 volts. In their special type of trailing cable the conductors are insulated with rubber, and after being laid up together are sheathed with bitumen so as to form a solid mass into which water cannot penetrate.

THE freight rate on rubber from Singapore to London is 60 shillings [= \$14.60] per ton of 50 cubic feet.

IMPORTED pink shaded rubbers, for veneering, in dental work, are offered to the trade as high as \$6 per pound.

LONDON RUBBER EXHIBITION.

THE cosmopolitan character of the congress in connection with the International Rubber Exhibition to be held in London this month—from the 14th to the 26th, inclusive—is suggested by a glance at the different names applied to the undertaking by our exchanges, in various languages, in reporting on work in progress here or there in preparation for Olympia. Some of the names are:

Exposición Internacional Hulera.
Exposição de Borracha.
Exposition Internationale du Caoutchouc.
Internationale Ausstellung für Kautschuk.
Internationale Rubber-tentoonstelling.

The space reserved for Ceylon at the International Rubber Exhibition has been increased to 80 × 30 feet, or double the original allotment. The display will be under the joint auspices of the Ceylon Planters' Association and the Ceylon Chamber of Commerce. Mr. M. Kelway Bamber, government chemical analyst, will attend as official representative of Ceylon.

The Dutch commission for the rubber exposition embraces the following representatives of the rubber industry in the Netherlands: B. Bakker, director of the Nederlandsche Caoutchouc-en Guttapercha-Fabriek "St. Joris," at Ridderkerk; J. Merens, of Gebroeders Merens, rubber manufacturers at Haarlem; and J. Pompe, director of the Amsterdamsche Caoutchouc-Fabriek.

The Associação Commercial do Amazonas, at Manáos, after an existence dating from 1875, on May 28 last adopted a new constitution, and apparently has become more active in promoting commerce in its region, which embraces the most important source of native rubber in the world. The State government at Manáos has taken steps to have the rubber resources recognized at Olympia this month, and the commercial association will be represented there by Senhor Nicolaus H. Witt, who for so many years has been prominent in the Manáos rubber trade.

ATLANTIC CABLE JUBILEE.

ON August 5 occurred the fiftieth anniversary of the completion of the laying of the first Atlantic cable—from Valentia, Ireland, to Bay Bulls, Newfoundland. It was not the first submarine cable—there is yet working a cable laid seven years earlier between Dover and Calais—but the fact that it spanned an ocean, together with the large investment of capital involved, impressed the minds of millions who had not before realized the existence of this phase of telegraphy. It matters not that the cable of 1858 soon broke down, and that seven years elapsed before the Atlantic was spanned electrically with success; enough was accomplished by that first effort to convince scientists and capital of the feasibility of the idea, and an incentive was given to building submarine cables that has not yet spent its force. There are now about 247,888 miles of such cables in operation, including sixteen lines across the Atlantic alone.

The promoters of the 1858 cable are entitled to be remembered for their enterprise and public spirit no less because the line so speedily ceased to be of service. September 1—just fifty years ago to-day—was observed as a holiday in New York in honor of the cable and its builders, and the electrical interests in New York are now planning to commemorate suitably the cable jubilee during the present month.

The cable interest has stimulated, more than all else combined, the demand for gutta-percha, the use of which, in fact, has been practically monopolized for cable building. It is, of course, impossible to estimate the total consumption to date of gutta-percha for insulating cables, but it must have averaged more than 1,000 tons a year since 1858, and this is a very large figure, considering the limited area in which gutta-percha exists, and the difficulties encountered in gaining it.

India-Rubber Interests in Europe.

THE RUSSIAN AMALGAMATION.

A ST. PETERSBURG correspondent of the *Financial News* (London) remarks that "even Russia is becoming Americanized, to judge from the tendency developing of late to form Trusts." The despatch describes as an "india-rubber trust" the community of interest established lately between the two great rubber manufacturing companies at St. Petersburg and Riga. [See THE INDIA RUBBER WORLD, August 1, 1908—page 377.]. The *Financial News* reports the amalgamation with the rubber trust of the important Moscow mercantile house of C. Weyerbusch & Co., a large shareholder in which is A. Bokelmann, who also is a partner in the international banking house of J. W. Junker & Co. (Russian Bank of Foreign Trade), Moscow. Mr. Bokelmann, with his banking associates, is referred to as having conducted, with Baron Friedrich von Krauskopf, the largest shareholder in and president of the Russian-American India-Rubber Co., the negotiations for the transfer to the latter company of half the share capital of the "Prowodnik" company, of Riga.

For the purpose of the amalgamation, according to both the *Financial News* and the *Börsen Courier*, of Berlin, the Russian-American India-Rubber Co. have decided upon the increase of the share capital from 8,000,000 rubles [= \$4,120,000] to 20,000,000 rubles [= \$10,300,000]. Of the increase 7,000,000 rubles are required for the purchase of the "Prowodnik" shares, and it is intimated by the *Courier* that part of the new capital issue will be used for further purchases of "Prowodnik" shares. The Russian-American India-Rubber Co. had already taken over the St. Petersburg firm of Leopold Neuscheller, controlling a large export trade in Russian rubber goods, at a price stated by the *Financial News* at 2,200,000 rubles [= \$1,133,000].

The latest balance sheet of the Russian-American showed: Share capital outstanding, 8,000,000 rubles; debentures, 7,079,888 rubles; reserve fund, 4,212,839 rubles; second reserve, 3,003,896 rubles; total, 22,296,613 rubles [= \$11,482,755.70]. The dividend for 1907 was 25 per cent. on the share capital. A Russian newspaper reports that the firm style of the Russian-American company will be amended to include the word "Trigolnik," which is Russian for "triangle," of "three cornered," referring to the company's trade mark now so widely known. The trade mark is illustrated herewith. The initials in it stand for the words which form the company's name in Russian, beneath which is "St. Petersburg," in Russian, and below all the words "trade mark."



THE TRADE IN GERMANY.

REPORTS from Germany connect the important Harburg-Wien company with a new corporation, capitalized at 1,000,000 marks [= \$238,210], the object of which is to obtain rubbers of commercial value from minor plants. Every advance in crude rubber

prices tends to a further study in the utilization of new grades of rubber. Precisely such conditions led to the initial experiment with the Assam and African rubbers, which have been brought into such wide use as to greatly lessen the dependence of the industry upon Para rubber; otherwise the latter quality might now be selling at double the present figures quoted. The most recent important example in this field was the development of the Guayule rubber interest, in which work the Harburg factory just mentioned took an active share.

An exhibit which attracted no little attention at the recent ship-building exhibition in Berlin was the display of asbestos wood by Asbest- und Gummiwerke Alfred Calmon (Hamburg). An entire ship's cabin constructed of this material formed part of the exhibit. "Asbestos wood" is made with natural wood as a base, covered with the Calmon firm's patented "Eternit." It is represented as looking like natural wood, but as having the advantages of being fireproof and resisting heat and cold, while its noiselessness is referred to. In addition to its advantages for the construction of walls and the like, portable articles made of the new material are not heavier than natural wood.

At a meeting of the directors of the Vereinigten Hanf-schlauch- und Gummiwaaren-Fabriken Aktiengesellschaft zu Gotha, the president stated that the volume of trading for the first five months of 1908 had equalled the business for the same period of 1907, and all departments of the factory were still active. The pneumatic tire factory which the company opened in the spring was fully occupied.

At a meeting of the Centralverein Deutscher Kautschukwaren-Fabriken, in Berlin, a proposition from the management of the London Rubber Exhibition that the

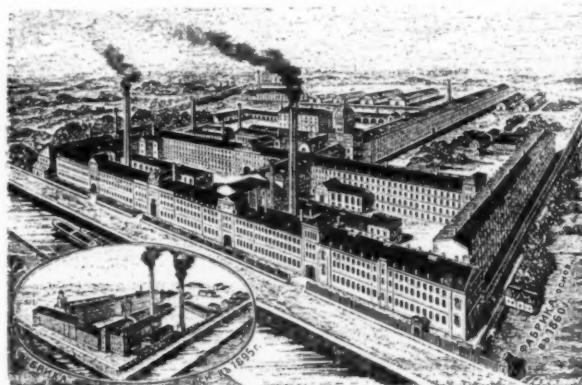
German manufacturers be represented by displays at Olympia did not meet with adoption, though supported by a communication from the Kolonial-Wirtschaftliche Komitee. The sentiment of the association was that the London exhibition was likely to result in great benefit from the standpoint of the crude rubber and planting classes, but not so much in respect of the manufacturing interests.

NOTES FROM AUSTRIA.

THE withdrawal of Josef Reithoffer's Söhne (Vienna) from the Austrian rubber manufacturers' "cartel," or price convention, will not, the *Gummi-Zeitung* hears, terminate the cartel. Our contemporary regards its continuance as desirable for the trade, from the standpoint of manufacturers and dealers alike, since without its influence the tendency is for so many new concerns to enter the trade as to make profits almost impossible.

The Vienna firm of Tischler & Co., 4, Werderthorgasse, has become Amerikanische Gummischuhniederlage Henry H. Holland. The Mr. Holland referred to is the manager of the European depot, in London, of the United States Rubber Co.

Ludwig C. Henkel, director of the Prager Gummiwaren-Fabrik, at Vysocan, near Prague, has resigned to accept the position



WORKS OF RUSSIAN-AMERICAN INDIA-RUBBER CO.

ТОВАРИЩЕСТВА РОССИЙСКО-АМЕРИКАНСКОЙ РЕЗИНОВОЙ МАНУФАКТУРЫ

[English letter equivalents for the above: TOWARITCHESTWA, company; ROSSIJSKO-AMERIKANSKOI, Russian-American; REZINOWOI, india-rubber; MANUFAKTURY, manufactory.]

filled by the late Oscar Witt, a director of the Münden-Hildesheimer Gummiwaren-Fabriken Gebr. Wetzel, A.-G., at Hildesheim, Germany. The Prague factory was founded in 1897 as an independent concern, and on going into liquidation passed under the control of Oesterreichisch-Amerikanische Gummifabrik, A.-G., of Vienna, by whom it has since been operated. Mr. Henkel is succeeded at Vysocan by Bohumil Moravec and Richard Hahn.

BRITISH COMPANY NOTES.

THE directors of George M. Callender & Co., Limited, have issued a report to the shareholders, giving a version of the retirement from the chairmanship of George M. Callender, the accuracy of which is strongly disputed by Mr. Callender, who has promised to publish a reply. At a special meeting of shareholders (London, July 1), it was resolved to continue for six months under a new manager, after which another meeting will be called. The company is capitalized at £100,000 and manufacture bitumen specialties.

The profits of the General Electric Co., Limited, for the last fiscal year showed a decline of about £9,000, due to the writing down of values on raw materials in hand. The stock carried amounted usually to £300,000, composed of india-rubber, copper, and so on. The chairman expressed the opinion that no permanent improvement in the position of the British electrical industry was likely to occur while the country maintained its free trade policy. The usual yearly dividend of 5 per cent. was declared.

R. Crummack & Co., Limited, registered in London, July 15, 1908, with £5,000 capital; to acquire the business carried on by R. Crummack & Co., 3, Marsden street, Manchester, manufacturers of cloth for the india-rubber trade.

Neptune Rubber Co., Limited, registered in London, July 15, 1908, with £4,000 capital; to carry on the business of rubber merchants and to manufacture and deal in heels and other rubber goods. J. W. Battey, rubber manufacturer, Levenshulme, is managing director, and the offices are at Temple place, Temple street, Manchester.

Resilient Tyres, Limited, registered in London, April 9, 1908; capital, £60,000. Registered offices: 11, Ironmonger lane, E. C., London.

The business of P. Frankenstein & Sons, Limited, india-rubber and waterproof garment manufacturers at Manchester, is being continued by the brothers Simon, Louis, and Harry Frankenstein, whose father, the founder of the business, died recently in his seventy-fifth year.

The Rubber Heel Manufacturing Co., of Clayton, Manchester, whose premises were badly damaged by fire in May last, have resumed work on a good scale, manufacturing rubber heels and soles for the trade.

Mr. E. M. H. Shelley has been appointed a managing director, and Messrs. Charles Bulkeley Cutton and Spencer Brett, directors, of Gow, Wilson & Stanton, Limited, rubber and tea brokers, of 13, Rood Lane, E. C.

FRANCE.

EDOUARD MICHELIN, of Michelin et Cie., the French rubber tire manufacturers, has resigned the presidency of the Automobile Club d'Auvergne, as a protest against that club's alliance with l'Association Générale Automobile of France, one of the objects of which is the securing of automobile accessories for its members at reduced prices. The scale of discounts on pneumatic tires for Association members appeared in THE INDIA RUBBER WORLD, August 1, 1907 (page 349).

SWEDEN.

THE establishment is reported of a firm at Stockholm, under the style Aktiebolaget Zakin, to manufacture an artificial rubber under the name "Zakin" patented in several countries by Zacharias Olson [see THE INDIA RUBBER WORLD, June 1, 1907—page 268]. The capital mentioned is 420,000 kroner [= \$112,560].

THE LARGEST SOLUTION PLANT.

IT is probable that no other business in the world affords so many opportunities for the reward of individual genius as does the rubber industry. Take, for example, the rise of the Faultless Rubber Co. It was, as the whole trade knows, the creation of its president, Mr. Thomas W. Miller, and was builded

on lines that the best equipped rubber men were a unit in condemning, as being neither sound nor profitable. To-day, with the biggest solution plant in the world, and with customers wherever rubber goods are used, it epitomizes opportunity in the rubber manufacture.

The plant at Ashland, Ohio, is ideally situated; it is close to the railroad, in a thrifty city of 5,000, with good water, good help, and a progressive and patriotic city government. The factory buildings are of brick and tile construction, and have about 100,-



THOMAS W. MILLER.
[President of the Faultless Rubber Co.,
Ashland, Ohio.]

coo square feet of floor space, in the aggregate.

The power plant consists of 600 H.P. in boilers and 400 H.P. in engines. There is also the usual equipment of washers, mixers, calenders, and vulcanizers, with one battery of 14 hydraulic presses, and another of 10 soon to be installed.

It is in the solution room, where there are scores of automatic dipping machines, and in the acid curing building, that the real individuality and originality of the business is shown. There are machines and devices, with special arrangement for ventilation and handling not shown to the world at large, as they were designed to fit the special lines that they so successfully produce. The company, with its \$300,000 capital, and a goodly surplus, does not aim to grow larger. It rather plans to create new and original specialties, and cut off lines that are staple and in which competition is fierce. Back of this policy, quiet, capable, inventive, an unusually shrewd judge of men and markets, stands "Tom" Miller, creator of the business.

"RUBBER HEELS AND RELIGION."

AN Irish newspaper contains a letter from a leading firm in reference to a widely published report [see THE INDIA RUBBER WORLD, May 1, 1908—page 259] to the effect that rubber heels having a metal plate of the shape of a cross are unsaleable in parts of Ireland, as being calculated to offend religious susceptibilities. The writer of the letter considers their firm as being particularly referred to as the company obliged to withdraw from trade the heels having the objectionable cruciform design, and they add: "So far from there being any difficulty in selling rubber heels of this particular pattern in Ireland, we sell more in that pattern there than any other; in fact, they have a very large sale throughout Ireland, and are extensively worn in convents and also by the priesthood."

Alum for Coagulating "Castilloa" Latex.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the July meeting of the Camara Agricola de Palenque, nine of the fifteen rubber plantations of this district were represented.

Following a general discussion on rubber culture, mode of tapping, coagulation, etc., it was suggested and requested that the president of the Camara answer through the columns of THE INDIA RUBBER WORLD an article on "The Coagulation and Curing of Rubber" that appeared in the July number of said journal [page 326], giving the process in use by some of the companies represented in this Camara.

Mr. Elmer A. Schmidt, manager of the Rio Michol Rubber Plantation, the pioneer of this mode of coagulation here, has kindly furnished a description of his process, which I enclose.

H. H. MARKLEY,
President Camara Agricola de Palenque.

Lumija, Estado Chiapas, Mexico, August 4, 1908.

Mr. H. H. MARKLEY, President of the Camara Agricola de Palenque, Finca Lumija:

DEAR SIR: I am pleased to conform with your request to give a description of the methods by which we obtained the rubber shown you and the members of our association at our last meeting. As we have used the process for nearly a year on latex of wild and also planted trees, we had opportunity for the time test also, and find the product stood it well.

As it may be interesting to know what other methods we had used, before we came to use this one, now exclusively, I will describe them in short. On this plantation, which has a big amount of wild rubber, besides the planted trees, we have been tapping continually during many years, coagulating the latex by the process known to the Indians of this district, namely the juice of a vine called "bejuco" and also "nata," and common soap or the lye of wood ashes, boiled in water. The product was not bad, but it would give out a nauseating odor when exposed to the sun, and after keeping some time would become tacky. Another inconvenience was that with the increasing need of the "nata" vine when our young rubber would come into bearing, we would have to cultivate the vine or else look for another way of coagulation. Then we tried common water, but to get results still had to use "nata" and soap. The rubber came out very clean, but the process was slow, and it would get tacky at times; perhaps, however, this was due to the varying quality of the soap obtainable here.

Eventually we got acquainted with the process used in Ceylon and tried it here, but neither the acetic acid, the formaline, nor the other chemicals used with the *Hevea* rubber gave the good results expected from them, until, by looking up the chemical properties of rubber in the good old book called "United States Dispensatory," we found alum mentioned as a coagulating agent for rubber, which we tried with the excellent result you know. The very simplicity of the process, which needs no ma-

chinery, recommends it where skilled labor cannot be obtained without high pay and difficulty. At the same time the rapidity with which the rubber is obtained is of great importance.

We use here cylindrical tanks made of corrugated sheet iron one meter [= 39.37 inches] high by $\frac{1}{2}$ meter wide, with a faucet attached to the side, level with the bottom. Into this tank, the latex, not exceeding 10 kilos [= 22 pounds] per tank, is poured through a strainer made of mosquito screening, which retains pieces of bark and other impurities. After rinsing the strainer we fill the tank nearly to the top with water, leaving it to rest over night, and next morning the rubber will have separated sufficiently from the water, which has obtained a black-greenish tinge, and can be drawn off through the faucet, taking care that when it changes into milkish yellow, the drawing off operation to be suspended. The latex, thus cleaned from all its soluble impurities, is now poured into a vessel in which about a table-spoonful of powdered alum had been dissolved previously in about 2 liters [= 2.11 quarts] of water, the tank being cleansed with little quantities of water which are all poured in. The coagulation will then be perfect and can be seen by taking a sample out with a glass when can be seen cream-like corpuscles of rubber floating towards the top.

Meanwhile, you will have spread some moist, light cotton cloth over wooden frames, fastened with spikes and pour the rubber on it, first in small quantities, gradually increasing the amount and then let it drain off. In about two hours most of the water containing the alum in solution will have run off, leaving the rubber in a soft creamy condition. This can be easily scraped off and worked with the hands into cakes in very short time. These cakes are cut into bands which are hung to dry, two days being sufficient under ordinary conditions. These strings of rubber rolled up into oblong balls of from 10 to 25 kilos are then ready for shipment.

With reference to our tapping, I must say that the machete has been discarded long ago and of several instruments and tools tried, including those of the Malay States and Ceylon, we have finally adopted one which gives good result in tapping the wild as well as the planted trees. It consists of a rather wide "U" shaped steel band of the width of a bandsaw, which is fastened to a wood handle. This handle has a long set screw passing through it, regulating a steel band by forcing it away from the handle to which it is attached through screws, thereby controlling the depth of the cut and serving at the same time as a protector to the knuckles of the tapper.

We take care to set the tool shallow enough not to injure the cambium, but after the cut, which removes the bark, has been made, we have the operator run a sharp knife the length of the cut. This sets the latex flowing more freely and as it closes right away does not injure the tree by letting in air to woody portions. We have been tapping trees from 18 inches circumference to up to the biggest wild trees, with satisfactory



SEVEN-YEAR-OLD "CASTILLOA" RUBBER.

[On plantation "Iowa," near Salto de Agua, Estado Chiapas, Mexico, owned by the German-American Coffee Co., of New York. Planted 12 x 12 feet; some are 28 to 30 inches in girth, and 40 to 50 feet high.]

results with this kind of knife and can only recommend it to all who have not yet adopted and became used to another instru-

ELMAR A. SCHMIDT,

Manager of the Rio Michol Rubber Plantation.

Salto de Agua, Estado Chiapas, Mexico, July 30, 1908.

[THE use of alum in coagulation of *Castilloa* latex is not new and, of course, our friends do not suggest that it is. Indeed, it is so prompt and effective that any one wishing to show how quickly latex can be coagulated—for example, any lecturer on india-rubber—is quite apt to use that as the demonstration. There is just one danger in connection with that type of coagulation, and that is using the alum in excess, which shortens the fiber of the rubber appreciably and as a consequence makes it of less value.

The preceding communication was accompanied by a large sample of alum-cured rubber in strip form, which looks remarkably well. It is clear and dry, is possessed of remarkable tensile strength, and appears to be perfectly neutral—i. e., without exhibiting any presence of alum. Rubber of this quality would find a ready market, and bring a good price.—THE EDITOR.]

YIELD OF PLANTATION RUBBER.

THE latest report from a leading rubber planting company in the Far East mentions with satisfaction the prospect of obtaining this year 200 pounds of rubber daily from 10,000 trees. This means the tapping of 50 trees once to get 1 pound of rubber, or 50 tapplings of the same tree to get 1 pound. Two hundred tapplings in a year would be necessary, therefore, for 4 pounds of rubber per tree. It is the continuous aggregation of these small quantities that makes up the immense volume of rubber consumed every year. It may be added that the particular company referred to, working last year on such a scale as is here indicated, produced 43,000 pounds of rubber and paid a dividend of 42½ per cent.

The *Ceylon Observer* quotes Mr. Herbert Wright, formerly in the government service in Ceylon and the author of "Pará Rubber," as thus summing up his impressions of a recent visit to Ceylon after having been absent for a year or two in England: "I have been perfectly satisfied with nearly everything I have seen. I am as confident as any planter that the future success of the rubber industry is assured, at any rate from the planting side. Trees will grow, and will give large quantities of rubber; and there is an enormous acreage of land for cultivation purposes. In the future, I think, we shall probably be able to work on a basis of 250 pounds to 300 pounds per acre per annum from well planted estates, which should result in very handsome dividends, even with Pará plantation rubber at 1s. 6d. [= 36.5 cents, gold] per pound."

A rubber tree on a Ceylon plantation, now 14 years old, is reported by the *Ceylon Observer* to have yielded 14½ pounds of rubber under constant tapping for 12 months; it was allowed to rest for 15 months, and again tapped for a year, yielding 14 pounds of rubber. At the date of the report the tree had been resting again for two months, and the owner said that the latex cells were filling again.

RUBBER CULTURE IN CEYLON.

THE amount expended on rubber culture in Ceylon to date is estimated by an authority quoted by the American consul at Colombo at about \$9,000,000. The interest now requires the attention and labor of say 250 Europeans and 75,000 to 100,000 Tamil coolies.

The *Ceylon Observer* reports the return to Ceylon of George S. Brown, of Brown & Davidson, Limited (Colombo), after several months of absence in the Federated Malay States engaged in the installation of machinery for rubber plantations, which would indicate that this line of machinery is becoming very important. It is mentioned that most of the machines in question are of Mr. Brown's invention.

Ceylon papers mention the sale in Kalutara district of 122 acres planted to rubber, 2½ years old, for "close on 50,000 rupees." This would work out at \$16,221.66 (gold), or \$132.96 per acre.

Regarding Lagos rubber (*Funtumia elastica*) the report of the Ceylon royal botanic gardens for 1907 says: "Continued cultivation of this confirms the unsuitability of the tree to Ceylon, owing to the regular and severe attacks of a plague of an indigenous caterpillar, which not only completely defoliates the trees, but even attacks the tender shoots."

NOTES ON CEARA ("MANIHOT") RUBBER.

THE annual report of the Ceylon royal botanic gardens for 1907 says that 5 acres of Ceará rubber (*Manihot Glaziovii*), at the Maha-Iluupalama experiment station, planted 10 × 10 feet, have done exceedingly well and made a rapid growth. At an early stage they will be tapped in a special manner by the department chemist, Mr. Kelway Bamber. It is proposed to increase the planting of this species.

The *Philippine Agricultural Review* (Manila, April, 1908) contains a report on "La Granja Modelo" (a model farm), established on Negros island by the Spanish government, and now in charge of the Philippine department of agriculture. "There is a small grove of Ceará rubber trees on the place at the present time which is producing an abundance of seed used for distribution by this bureau," says the *Review*, which contains an illustration showing the rubber to be in fine condition.

PLANTING IN SOUTH INDIA.

A well known planter, Mr. H. Drummond Deane, after 22 years of experience in Ceylon, is now living in South India, where he is interested in and very enthusiastic over the future of rubber planting. He reports over 7,000 acres of planted rubber in the Mundekayan district alone, and probably 6,000 acres in other parts of Travancore.

MISCELLANEOUS NOTES.

It is very doubtful if rubber can be profitably grown in the British states of Rhodesia, Transvaal, and Natal, in South Africa, in the opinion of a correspondent of *London Financial News*. He argues that the preliminary expense would be an insuperable objection, considering the higher wage scale than prevails in Ceylon and Malaya.

The *Castilloa* rubber plants at the Porto Rico agricultural experiment station, according to the annual report for 1907, have begun to seed, and the seeds have been distributed for planting. It is intended to begin experimental planting this year, though the trees are only 6 years old.

The horticultural establishment of A. Godefroy-Lebeuf (Paris) send us a catalogue of seeds of rubber producing species, which it is in position to supply in small or large quantities, ranging from *Hevea Brasiliensis* (the largest rubber tree, perhaps) to *Landolphia Thollonii*, one of the plants of the class *caoutchouc des herbes*.

PLANTING "CASTILLOA" IN COLOMBIA.

IN an article on rubber planting in Colombia in THE INDIA RUBBER WORLD December 1, 1905 (page 75) the Choco region was described, with a map showing the location of the principal rubber plantations then existing there. Two of the planters mentioned in that article, Señor Ciceron Angel and Señor Carlos Nicolas Ferrer, whose plantations adjoined on the river Tangui, a tributary to the Atrato from the west some 24 miles below, or to the north of Quibdo, have consolidated, making a partnership under the name of Campoalegre ("joyous field").

Campoalegre, which is well equipped with administration and other buildings, and a serviceable boat landing, is devoted primarily to the growth of plantains, but the satisfactory progress made by the young rubber upon the estate encourages the proprietors to go in more extensively for this crop. The two illustrations herewith have been made from photographs taken for

THE INDIA RUBBER WORLD. The first shows one of the many seed beds for *Castilloa elastica* planted at the edge of the forest, the seedlings in this view showing five months' growth. The second picture illustrates three-year-old planted *Castilloa* trees. The shade from trees of this age causes the plantains to cease to be productive, and they are gradually exterminated by the rubber.

Campoalegre contains some 4000 planted rubber trees in their fourth year, some 36,000 trees from one to three years old, and



PLANTED "CASTILLOA ELASTICA" IN COLOMBIA.

[Three-year-old trees on plantation Campoalegre, in the Choco region.]

at the last report about 200,000 plants in seed beds awaiting transplanting. From now the preparation of seed beds will be an easy matter, as the older trees begin to yield seed crops, whereas previously seeds have had to be gathered from isolated wild trees, either difficult to find, or so remote as to make uncertain the transportation of the seeds before they perished.

Messrs. Angel and Ferrer market their plantains in Quibdo, sending them up in "dug out" canoes. The *plantanos* are the staple article of diet of the region, being either roasted or fried,



PLANTED "CASTILLOA ELASTICA" IN COLOMBIA.

[Specimen of seed beds on plantation Campoalegre, in the Choco region.]

ripe or green; boiled green, or cut up in stews or with pork and beans. A ripe *plantano* slit open and powdered with cheese, then roasted and served with butter, is a particular delicacy in the tropics. In Quibdo they sell at from 24 to 80 cents (gold) per ration of 64. The plantain trade at Campoalegre has become so important that the owners have ordered a large towing launch to handle the cargoes, and at the same time facilitate their own visits to the important commercial center Quibdo. Señor Angel is typical of the men who are leading in the regeneration of Colombia under President Reyes's government. He has an in-

terest in planing mills and a furniture factory at Quibdo, is manager of the large mercantile house of Eladio Ferrer (his father-in-law), and owns valuable interests in mines. Señor Ferrer is a young man of distinguished family, being a son of the well-known merchant and statesman Don Leoncio Ferrer. So enthusiastic have these gentlemen become with respect to rubber that they plan to have the better part of 2,000,000 trees producing on the 5000 hectares of Campoalegre within ten years.

Some interesting experiments are being made looking to the planting of the fiber plant "sansaviera" with rubber trees. This would not interfere with the corn crop which should always be planted with the rubber, and would begin to yield within 18 months, and continue to produce after the rubber trees reach a development that would stifle all but a shade loving plant. The indications are that this combination will be successful for developing large areas of the Choco and the great region opened up by the Colombia Central railroad which is now being constructed from the gulf of Uraba to the rich interior of Colombia, and is one of the chief of the many agencies that are producing an economic revolution in Colombia.

Angel and Ferrer were to make a bid for the rubber ribbon at the Bogotá agricultural fair this summer, which was won last year by the brothers de la Torre with a slab of rubber from their young *Manihot* trees.

AN ALLEGED FRAUD IN RUBBER.

THE federal grand jury for the northern district of Illinois, at the July term, in Chicago, found indictments against Talton Embry and Hiram E. Rose, charging them with use of the United States mails to defraud, in their capacity respectively as vice-president and secretary of the San Miguel Plantation Co., which purported to be developing a rubber plantation in the state of Vera Cruz, Mexico, with headquarters in Chicago. Capiases were issued for these men, who later appeared before the clerk of the United States circuit court at Chicago, and gave bond for their appearance at the next term. At latest accounts no pleas had been filed. The United States attorney advises **THE INDIA RUBBER WORLD** that the trials will take place probably in October or November.

The San Miguel Plantation Co. was advertised as a corporation capitalized at \$200,000, under the laws of Illinois. The fifth annual report to the investors in the company, dated March 1, 1906, stated that the company then had under cultivation 400 acres in rubber, 450 in sugar cane, and 350 acres in corn. The company did not offer its shares to the public, but issued 2,000 bonds—one for each of the 2,000 acres in the property claimed—many of which bonds appear to have been sold at from \$250 to \$350. Dividends were promised on these bonds from the expected sale of produce, and it appears that money was actually distributed to the investors as follows: In 1901, 7 per cent. on the sums actually paid on account by the investors; in 1902, 10 per cent.; in 1903 and 1904, 15 per cent. yearly; in 1905, 2 per cent. instead of the "expected" 25 per cent., and in 1906, 1 per cent., after which payments ceased.

It was charged before the grand jury that these dividends instead of coming from the sale of produce on the San Miguel plantation were paid partly by Embry and Rose from their own pockets, and later from funds paid into the company by bond purchasers. It was charged that pictures of the company's plantation shown were really taken on another plantation, and that the company had made no sales of produce. The indictment of Embry and Rose followed several months of work carried on by a committee of the investors in the San Miguel company headed by Mr. A. A. Barber, secretary and treasurer of The C. E. Sutton Co., an iron firm, of Toledo, Ohio, represented by Willard L. White, an attorney of Chicago.

According to the Chicago *Tribune*, service on Embry was

sought in Cincinnati, where he had been connected with an important business firm, and Rose was looked for in Owensboro, Kentucky, where he occupied a costly home. The company's office in Chicago for the reception of funds was opened until the date of the indictments referred to.

This is the third case in which promoters of rubber planting companies in the United States have been brought to the attention of the courts. In 1903 Frank D. Bittinger, president of the Nicaragua Co., incorporated in New Jersey with \$1,000,000 capital authorized, and having an office in Chicago for the sale of lands in Nicaragua and the promotion of a rubber plantation there, was arrested on February 13, indicted on November 5 for the fraudulent use of the mails, and on December 18 was sentenced to one year and one day in prison and to pay a fine of \$1,000. A more recent development was the indictment in the Massachusetts courts, in 1905, of the officers of the Consolidated Uvero Rubber Plantations Co. for grand larceny, one of whom, Ferdinand E. Borges, is now serving a ten year sentence in the state prison.

RUBBER IN THE CONGO FREE STATE.

THE planting of rubber in the Congo Free State by legal requirement by the concessionaire trading companies has been referred to frequently in these pages. This interest is a subject of a late report by the United States consul



SHIPPING RUBBER ON THE CONGO.
[Steamer *Belgique*, at Citas.]

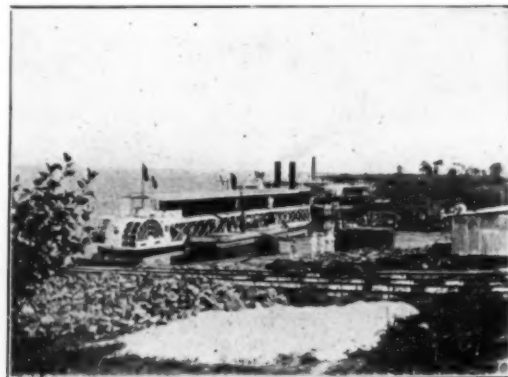
general at Boma, Mr. James A. Smith. He states that it is estimated that fully 13,000,000 plants have been set out, which should be capable of producing within a few years at least 650 tons of rubber annually. Mr. Smith states that it has been proved by experiments that the tree known as *Funtumia elastica* thrives better under cultivation and gives much quicker results than various species of creepers known as *Landolphia*. The quality of the tree rubber is excellent and a profitable product is available after 7 years, while ordinarily double this time is required before the vines yield in sufficient quantity to be profitable.

Mr. Smith says that while the annual exportation from the Congo has shown no diminution during the past several years, there is no question but that in many sections of the state the supply of wild rubber has rapidly diminished, and in a large section of territory is practically exhausted. Independent of the planting required of the trading companies, Mr. Smith learned that the Congo Free State has established three great centers of rubber cultivation each of 250,000 acres (1) in the Mayumbe district, near Banza; (2) in the Oubanghi district, near Duma; and (3) in the Lualaba-Kasai region, the idea being that one-third of the area will be planted within the next 6 years.

Further details regarding these new planting areas have not been available, but the consul general for the Congo Free State in the United States advises THE INDIA RUBBER WORLD: "Such plantations would be quite in line with the ideas of the king, who has consistently encouraged new plantations as well as the ordinary planting to replace exhausted vines and trees." It is known that the Congo trading companies for which Americans have obtained concessions are expected by the authorities to plant rubber to an important extent, and Mr. James Gustavus Whiteley, the Congo consul general referred to, states that one of these companies, the Société Forestière et Minière, has acquired 800,000 hectares [=1,976,800 acres] for the purpose of starting new rubber plantations on the Congo, though in this case it would seem probable that the terms planting and exploiting had been confused.

"TABBYITE" IS THE LATEST.

THERE are people in Utah who are indulging in dreams of wealth from the development of what they have been pleased to term Tabbyite—a material mined in the neighborhood of long known deposits of Elaterite, and having the characteristics somewhat of the latter, only more so. The new asphaltum product gets its name from an old Indian chief, Tabby, of the Uintah tribe, who discovered it on their reservation about 1895. He said nothing



SHIPPING RUBBER ON THE CONGO.
[Steamer *Dolisie*, at Citas.]

publicly about his find, and it was only after his death that the development of the tabbyite business began. The land on which it was first found is now the property of the Pittsburgh-Salt Lake Oil Co., who have begun the manufacture of waterproof paints from tabbyite, and who intimate that before the end of the year they will be installing plant for turning out the new material in shape for its use as a rubber filler.

The first number of THE INDIA RUBBER WORLD ever printed referred to newspaper reports then current about the discovery of india-rubber mines in Utah, and the resultant "excitement over the prospective fabulous wealth" to flow from it. The material then newly discovered was elaterite, concerning which reports have continued to come to hand from time to time. Once it was stated that the late Joseph Banigan, of rubber manufacturing fame, had become a large investor in elaterite deposits in the Uintah country, but he continued to the end of his life to put natural forest rubber in his footwear products. Whether the "new substitute for rubber" with the catlike name is to come nearer setting the rubber world on fire we shall report in the regular course of events.

THE raw asbestos trade is active and higher prices are looked for in the near future.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED JULY 7, 1908.

- N**O. 892,305. Wheel for motor vehicles. [Relates to the attachment of a removable rim.] H. H. Boyce, Oyster Bay, N. Y.
 892,401. Covering for milking organs. [Of sponge rubber, for cow milking machines.] H. von Celsing, Stockholm, Sweden.
 892,657. Bath tub seat. J. P. Eustis, Newtonville, Mass.
 892,673. Wheel tire. [Relates to a leather tread for pneumatics, wide metal studs mounted therein.] A. Michelin, Paris, France.
 892,699. Horseshoe pad. J. B. White, Buffalo, N. Y.
 892,760. Fastening device for rubbers. [—meaning footwear]. H. R. Nelson, Walnut Grove, Minn.
 892,853. Pneumatic tire for vehicle wheels. J. R. Kline, Los Angeles, Cal.
 892,884. Means for attaching pads to boots and shoes. W. Plowright, Manchester, England.
 892,948. Shield for tires. R. H. Faughnder, assignor of one-fourth each to C. Pearson and G. Bustetter, all of Sidney, Ohio.
 12,822. Overshoe. N. P. Bowler, Cleveland, Ohio, assignor to The Everstick Patents Co.

ISSUED JULY 14, 1908.

- 893,073. Wheel. [With pneumatic tire, and rim having a removable flange.] E. Hopkinson, East Orange, N. J.
 893,170. Hose clamp. L. Huser, Jack Wade, Alaska.
 893,189. Hose nozzle. H. E. McKechney, Rochester, N. Y.
 893,390. Machine for removing wrappers from hose after the vulcanizing operation and for rewinding said wrappers on mandrels. S. J. Sill, assignor of one-half to H. H. Hewitt, both of Buffalo, N. Y.
 893,475. Hose clamp. J. F. Gero, Newark, Ohio.
 893,554. Hose coupling. F. C. Onge, assignor, by direct and mesne assignment, to St. Onge Mfg. Co., Utica, N. Y.

Trade Marks.

- 31,012. J. Basler & Co., Paris, France. The word *Benac*. For reclaimed rubber.
 31,013. J. Basler & Co., Paris, France. The word *Tonac*. For reclaimed rubber.

ISSUED JULY 21, 1908.

- 893,624. Apparatus for applying bottle stopper rubbers. E. Harding, Boston.
 893,638. Vulcanizer for repairing tires. C. E. Miller, Anderson, Ind.
 893,655. Cushion tire. C. L. Rempe, Akron, Ohio.
 893,672. Tire for vehicle wheels. R. O. Stutman, assignor to the Bartholomew Co., both of Des Moines, Iowa.
 893,715. Vehicle wheel. E. Fishburn, Overbrook, Kans.
 893,832. Tire. H. B. Baruch, New York city.
 893,977. Type holding device for printing machines. S. Brown, New York city.
 894,014. Rubber tread or tire for wheels. E. B. Killen, London, England.
 894,052. Safety device for occupants of vehicles. R. Radtke, Suhl, Germany.
 894,059. Nozzle. J. Rosborough, St. Louis.
 894,066. Surgical appliance. L. G. Scarpa, Turin, Italy.
 894,084. Tire tread chain for automobile wheels, etc. J. C. Thomas, assignor of one-half to F. W. Barth, both of Corsicana, Texas.
 894,156. Device for locating and determining puncture in pneumatic tires. J. Lenderyou, Rogerstone, Monmouth, England.

Trade Marks.

- 34,110. William R. Brixey, New York city. Sectional view of an insulated electric cable. For insulated electric wires and cables and insulated tape.
 34,529. A. J. Slater, Montreal, Canada. The words *The Right of Way*. For rubber overshoes.
 34,622. National Shoemakers, Lewiston, Me. The word *Proclamation*. For cloth, rubber and leather shoes.
 35,186. The Goodyear Tire and Rubber Co., Akron, Ohio. A red seal, lettered in white *Red Seal Auto Tube*, in connection with the name *Goodyear* and the representation of a winged foot. For inner tubes of tires.

ISSUED JULY 28, 1908.

- 894,216. Leak stopper for hose. D. G. Kitzmiller, Harrisburg, Pa.
 894,276. Vehicle wheel [having a pneumatic tire and supplemental rim]. H. M. Martin, Columbus, Ohio.
 894,290. Vehicle wheel rim. E. C. Shaw, Akron, Ohio, assignor to The B. F. Goodrich Co.
 894,291. Vehicle wheel rim. *Same*.
 894,292. Vehicle wheel rim. *Same*.
 894,293. Vehicle wheel rim. *Same*.
 894,334. Composition for making artificial leather. H. Lewis, Fitzroy, Melbourne, Victoria.
 894,377. Tire armor or protector. C. Filler, St. Johnsville, N. Y.
 894,450. Safety device for gas hose. B. Leyh, New York city.
 894,458. Resilient wheel of motor cars and other suitable road vehicles. T. Oldfield and J. A. Schofield, Halifax, England.
 894,490. Process for the production of pure caoutchouc. [The distegrated plants, with a solution of calcium and magnesium sulphide, are boiled in sulphurous acid; the resulting substance is treated with alcohol; the

pure caoutchouc in the remainder is dissolved in naphtha, after which the solvent is evaporated for the purpose of securing the said pure caoutchouc.] A. Foelsing, Offenbach-on-the-Main, Germany.

- 894,586. Pneumatic pump. A. Brest, New Castle, Pa.
 894,594. Hose coupling. M. Cani, Cleveland, Ohio.
 894,613. Process of insulating electric conductors. J. T. H. Dempster, Schenectady, N. Y., assignor to General Electric Co.
 894,617. Machine for cutting strips of packing. J. J. Fearson, assignor of one-fourth to J. Conley, both of Philadelphia.
 894,676. Pneumatic tire protector. R. A. Mason, New Market, Iowa.
 894,750. Road vehicle wheel [with tire of compressible material between two longitudinal retaining rings]. J. Slee, Earlstown, Newton-le-Willows, England.
 894,751. Tire protector holder. F. O. Slanker, Pomona, Cal.
 894,790. Manufacture of covered wire. [Relates to a wire covering machine.] C. V. Ackerman, Passaic, N. J.

Trade Marks.

- 34,621. National Shoemakers, Lewiston, Me. The word *Arwell*. For cloth, leather, and rubber shoes.
 24,805. National India Rubber Co., Bristol, R. I. The word *Paracore*. For insulated wire.
 34,806. National India Rubber Co., Bristol, R. I. The words *National White Core*. For insulated wire.
 35,299. The Anchor Packing Co., Philadelphia. The letter *A*, in a circle on which are the words *The Anchor Packing Co.* For rubber belting, rubber hose, and rubber packing.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1907.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 1, 1908.]

- 5,633 (1907). Football cover of rubbered canvas. E. Meyer, Brussels.
 5,643 (1907). Inhaling tube with bulbous end protected with vulcanite cover. G. M. Thomson, London.
 5,761 (1907). Pneumatic tire tread with cup shaped treads. E. Martin, London.
 5,767 (1907). Boot with hollow rubber sole. F. Burgmann, Eisenhammer, Germany.
 5,772 (1907). Vehicle wheel with non-elastic tire and an auxiliary rim, carrying a solid rubber tire slightly projecting beyond the main rim, the object being to produce a non-slipping wheel. H. Spurrier, Leland.
 5,833 (1907). Motor car tire; filling made of starch and a metallic chloride enclosed in a rubber jacket; the tire may be hollowed to receive an air tube. G. W. Mascord and two others, London.
 *5,838 (1907). Coupling for attaching inflating pump to a tire valve. W. S. Stapley, Bridgeport, Connecticut.
 *8,856 (1907). Rubber for a pump valve. J. Rowbotham, Philadelphia, Pennsylvania.
 5,858 (1907). Vehicle tire comprising rubber tread blocks combined with sheet metal rims. P. Lamure, Bois-Colombes, France.
 5,860 (1907). Motor car wheel fitted with supplementary tire—solid or pneumatic—to prevent slipping. F. A. Ellis, Kennington, Surrey.
 5,861 (1907). Non-slipping appliance for solid or pneumatic vehicle tires. W. H. Oades, South Woodford, Essex, and another.
 5,912 (1907). Boot heel plate of aluminum and rubber studs. H. W. Smart, West Ealing, and another.
 5,926 (1907). Pneumatic tire with detachable studded tread band. A. Sedden, Southport, Lancs.
 5,944 (1907). Abdominal belt, for treatment of the kidneys, carrying rubber bladders for holding heating substances. S. Fackenheim, Cassel, Germany.
 5,951 (1907). Rivet or road stud for pneumatic tire treads. G. F. Deschets, Paris.
 6,024 (1907). Tire rim with detachable flange. J. S. Foley, West Bromwich, and another.
 6,042 (1907). Inflating pump for tires. A. E. Brown, Aston, Birmingham.
 6,054 (1907). Molding of pneumatic tire covers. E. L. Curbishley, Manchester.
 6,065 (1907). India-rubber rendered wear resistant by mixing with it clay, emery, carborundum, and graphite. R. Hutchinson, Liverpool.
 *6,114 (1907). Pneumatic cushions to be applied between the body and axels of a vehicle. A. C. Mather, Chicago, Illinois.
 6,216 (1907). Artificial leather for belt or tire covers made of ramie fiber and a mixture of dextrin, gelatine, and balata gum. L. V. Guilletau, Paris.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 8, 1908.]

- 6,465 (1907). Studded tread for pneumatic tires. W. H. Paull and F. E. Hannan, Birmingham.
 6,480 (1907). Manufacture of molded footwear. A. E. Alexander, London. (Marvel Rubber Co., Bristol, Rhode Island.)

- 6,482 (1907). Non-slipping device for pneumatic tires. C. W. Pradeau, London.
- 6,531 (1907). Pneumatic tire protector and means of attachment. J. Lemoine, Paris.
- 6,566 (1907). Golf ball having a core of rubber filled with air or gas under pressure. W. E. Hodgson, Aberfeldy, Perthshire.
- 6,567 (1907). Press for molding raw india-rubber into blocks, for plantation use. R. Bridge, Castleton Iron Works, Rochdale, Lancs.
- *6,957 (1907). Hose reel. R. E. D. Kilburn, London. (C. A. Brinley, Philadelphia, and two others.)
- *6,614 (1907). Weaving of belting fabrics. E. C. R. Marks, London. (Multiple Woven Hose and Rubber Co., New York.)
- 6,634 (1907). Attachment of tire covers to rims. A. Hall, London.
- *6,654 (1907). Weaving of elastic fabric for tires, hose, and the like. W. M. Stevenson, Indian Orchard, Massachusetts.
- 6,663 (1907). Non-skid chain device for pneumatics. J. A. Harrison, Stechford, Worcestershire, and another.
- 6,680 (1907). Football boot with adjustable ankle pad. J. B. Cannan, London.
- 6,737 (1907). Pneumatic tire cover. C. Fare and C. Suteau, Paris.
- 6,757 (1907). Supplemental wheels to prevent slipping of motor cars. H. Kinsey and G. Challenger, Swansey.
- 6,792 (1907). Mold for rubber shoes. J. W. V. Mason, Manchester.
- 6,832 (1907). Non-slipping chains for motor tires. W. H. Ellam, Anerley, Surrey, and another.
- 6,872 (1907). Golf ball having a core of rubber filled with an incompressible fluid. A. Sedden, Birkdale, Lancs.
- 6,926 (1907). Rivets for pneumatic tire treads. J. C. Fell, London. (Société le Palladium, Antiderapant Imperforable, Paris.)

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 15, 1908.]

- 6,981 (1907). Pneumatic tire with sectional air tube. R. S. Wood, Manchester.
- 7,009 (1907). Waterproof garments with strips containing ventilating channels. L. Mistovski, Salford, Lancs.
- 7,042 (1907). Spring wheel with elastic tire. A. L. Ripert, Asnières, France, and another.
- 7,162 (1907). Composition for filling tires and apparatus for making it. W. J. Therold, London.
- 7,243 (1907). Tire consisting of a core of cork enclosed in a cover of canvas and rubber. A. J. Boulton, London. (C. A. Gauld, Toronto, Ontario.)
- 7,250 (1907). Tire rim having rigid carriers to which solid rubber sections are attached by a vulcanization. A. T. Collier, St. Albans, and Reilloc Tyre Co.
- 7,266 (1907). Spring wheel with pneumatic cushion between the axle and felly, and elastic tread. J. R. Bise, Vienna, and two others.
- 7,296 (1907). Golf ball. The core of a rubber wound golf ball consists of a nucleus of superoxidized or solidified oil, formed by heating rape, cottonseed, linseed, or other suitable oil until it reaches an unchangeable cohesive and highly elastic state. R. Hutchison, Prestwick.
- 7,326 (1907). Rim for pneumatic tires. T. Dunn, London.
- 7,347 (1907). Heel pad for boots. D. Cook, London.
- 7,371 (1907). Rotating device for coagulating rubber, the latex being exposed to smoke within a drum. H. A. Wickham, London.
- 7,450 (1907). Apparatus for molding and vulcanizing rubber boots. J. W. V. Mason, Manchester.
- 7,461 (1907). Non-slipping device for elastic tires. W. T. G. Ellis, Gourrock, Scotland.
- 7,574 (1907). Appliance for marking playing balls. E. Jones, Birmingham.
- 7,602 (1907). Non-skidding device for pneumatic tires. J. W. Wedderburn, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 22, 1908.]

- 7,628 (1907). Pneumatic tube for chair rockers. K. Müller, Canditen, Germany.
- 7,684 (1907). Pneumatic tire with air tube protected by metal segments. A. S. K. Ryan, London.
- *7,693 (1907). Pneumatic tire with cover comprising layers of leather. F. Mesinger, New York.
- *7,701 (1907). Hoof pad. J. Dillon, Hackensack, N. J.
- 7,714 (1907). Regenerating process for rubber. E. A. L. Rouxeville, Paris.
- 7,796 (1907). Cow milking machine. A. Gillies, Melbourne, Australia.
- 7,905 (1907). Rubber lining to render boots watertight. H. Burger, and F. Federolf, Munich, Germany.
- 7,968 (1907). Application of rubber to cause dentures to adhere to the gums. R. Galloway, Stirling.
- *8,010 (1907). Wheel tread comprising rubber blocks, springs, and a chain. A. L. Finnell and E. Schernikow, New York.
- 8,027 (1907). Tire composed of an elastic core and a leather jacket provided with metal heads. R. Neufeld, Vienna.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 29, 1908.]

- 8,150 (1907). Apparatus for coagulating the latex of rubber. [Described in THE INDIA RUBBER WORLD, June 1, 1908—page 2913.] L. Radclyffe, London, and Pehr Olsson-Seffer, Fruitdale, California.
- 8,220 (1907). Tool for removing tire covers. G. B. H. Austin, London. (E. M. Bolger, South Yarra, Australia.)
- *8,289 (1907). Hoof pad. J. F. Gormley, Chelsea, Massachusetts.
- 8,344 (1907). Sole for goloshes. D. and F. W. Smith, Christchurch, New Zealand.
- 8,381 (1907). Artificial leather, produced from cotton or other tissues under various processes, one of which involves treatment with rubber solution. L. Gevaert-Naert, Bevere-Audenarde, Belgium.
- 8,478 (1907). Substitute for hard rubber, formed from wood waste, ground and mixed with a binding agent, after which mineral matters are added. F. Amer, Siebenbruggen, Hungary.

- 8,531 (1907). Tobacco pouch. H. W. C. Harvey, London.
- 8,534 (1907). Surgical irrigator or douche. M. X. Doucen, Brussels, Belgium.
- 8,597 (1907). Joint for butt ended tire tubes. J. Rees, Cardiff, Wales.

THE FRENCH REPUBLIC.

Patents Issued (with Dates of Application).

- 385,521 (Dec. 24, 1907). Rogers and Myers. Composition for filling tire punctures.
- 385,495 (Mar. 18). E. Decauville. Flexible mandril for use in repairing tire covers.
- 385,582 (Nov. 29). E. W. Baker. Pneumatic tire.
- 385,638 (Dec. 27). Société Anonyme des Pneus Cuir Samson. Iron studded tread for pneumatics.
- 385,548 (Dec. 24). F. Coufal. Interchangeable boot heel.
- 385,784 (Dec. 23). A. Del Semme. Cork tire.
- 385,848 (Dec. 31). C. R. Duggan. Pneumatic tire.
- 385,898 (Jan. 2, 1908). J. Kirschner. Process and outfit for repairs of tire tubes.
- 385,937 (Jan. 4). Russian-American India-Rubber Co. Method of attaching pneumatic motor tires.
- 386,012 (Jan. 7). E. Berquier. Pneumatic tire.
- 386,074 (Jan. 9). Franklin and Batis. Pneumatic tire.
- 386,186 (Jan. 13). Nordling. Demountable rim.
- 386,197 (Jan. 14). J. Ancel. Tire protector.
- 385,908 (Jan. 3). F. J. Gleason. Process for the manufacture of hollow articles of rubber.
- 386,017 (Jan. 8). Siemens & Halske Aktiengesellschaft. Process for the treatment of caoutchouc.
- 386,148 (Jan. 11). W. Price. Process for the manufacture of articles of rubber.
- 386,343 (Jan. 18). E. Kempshall. Pneumatic tire.
- 386,344 (Jan. 18). de Villepique. Cellular elastic tire.
- 386,389 (April 9, 1907). Tournay. Tire protector.
- 386,430 (April 10). J. Flament. Tire protector.
- 386,532 (Jan. 24, 1908). Claverie and Comet. Tire protector.
- 386,318 (April 8, 1907). P. Charpentier. Process of repairing rubber shoes.
- 386,726 (April 16). Herault. Tire protector.
- 387,045 (Feb. 8, 1908). A. Leenitz. Vulcanizer for tire repairs.
- 387,213 (Feb. 13). H. Kuhnén. Pneumatic tire.
- 387,145 (April 29, 1907). E. Barbier. Elastic tissue.
- 387,243 (Feb. 14). Nicolas et Cie. Apparatus for the extraction of caoutchouc and other gums.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

RUBBER TRADE PARALYSIS IN ASHANTI.

IT is not much of a rubber country which has not some peculiar obstacle to the production of rubber, compared with which the fabled Kansas grasshopper and the less fabled fear of frost in the Delaware peach country are trivial. These remarks are suggested by a parliamentary paper on Ashanti, which is now included in British West Africa. Ashanti had become a considerable rubber producing country, the figure reaching in one year 1,354 tons, when a condition of affairs unexpected by the white residents developed. It appears that a fetish priest at Tekiman suddenly announced the imminent advent of a new "god," who was to bring riches to the poor and reduce the rich to abject poverty. At his coming the black man would dominate the whites. He let it be known particularly that any man found tapping rubber in the forests would on the "god's" arrival be turned into an antelope. The official report states: "Incredible as it may appear, this impostor succeeded in paralyzing the local rubber trade. He was eventually arrested and is at present detained in Coomassie. His fetish has fallen into disrepute, and is not now heard of."

UPRISING OF CONGO RUBBER GATHERERS.

REPORTS have reached Brussels of a widespread revolt in the Abir district of the Congo Free State. This is the territory held under concession by the Anglo-Belgian India-Rubber and Exploration Co., one of the oldest trading monopolies in the state and one which at times has been marvellously profitable. It is stated that the natives refused to collect rubber, attacked the whites, and burned several factories.

The Late Dr. Habirshaw.

THE death of Dr. William M. Habirshaw, at his summer cottage at Saratoga Springs, on August 15, came with a suddenness that gave a shock to his friends, though he had long been under the care of a physician. Within the present year he had made a visit of several months to Europe on account of ill health, returning in June. Apoplexy was the immediate cause of his passing away.

William Martin Habirshaw was born in February, 1835, at No. 197 William street, New York. His education was obtained in New York and in Europe. From early manhood until the end his inclinations and his achievements kept him in close touch with scientific matters. He was a member of leading technical societies in the United States and abroad, and numbered among his friends many men notable in the scientific world.

Dr. Habirshaw had acquired more than a national reputation as an analytical chemist, after having served in the engineering corps of the United States navy, when he became profoundly impressed with the great commercial possibilities of electricity, and realized how largely its successful application to the needs of mankind would depend upon safe and economical means of insulation. Hence he concentrated his efforts, first upon the production of insulation compounds, and again upon the improvement of machinery for the application of those compounds to electrical conductors. In both branches of development he was ultimately very successful, the great manufacturing business which he founded being based upon the merits of his patented inventions.

Dr. Habirshaw was one of the pioneers of the insulated wire industry in America. Early in its development he was associated for a while with Leonard F. Requa, but their work later carried them into different paths, which led to the formation of separate companies which achieved prosperity. Dr. Habirshaw, in 1886, organized The India Rubber and Gutta Percha Insulating Co., of which he became president and general manager, with a factory in New York city, at Twenty-fourth street and Eleventh avenue. It was devoted to the manufacture of the Habirshaw compounds, the demand for which rapidly grew until larger and more eligibly located premises became necessary. About 1890 the business was removed to Glenwood, in the city of Yonkers, which adjoins New York on the north. The company purchased there a disused machinery plant, which was changed to suit its purposes, and with ground enough attached to provide for the constant growth of the works which has since taken place.

The products of this company are most varied, being in requisition by the government, by great corporations, in private houses and on steamships—not only at home, but wherever electricity is employed commercially. Reference is made to these details to illustrate the success which attended Dr. Habirshaw's efforts in his chosen field of work. In time the company became convinced that its title was unnecessarily long and inconvenient.

and on January 1 last the name Habirshaw Wire Co. was substituted for it, this being simply the legal adoption of a title familiar in the electrical trade. Dr. Habirshaw retained to the end important holdings in the company, and gave to it much personal attention, but for several years his health was a matter of concern, and he became especially interested in training and organizing a corps of men who should be ready at any time to assume the whole burden of responsibility.

The residence of Dr. Habirshaw in New York was at No. 341 Madison avenue. Funeral services were held on the morning of August 19 at St. Thomas's Episcopal church, New York. A widow survives. An only son, William Habirshaw, a young man of great promise, and associated in his father's work, died ten years ago. A brother, J. Habirshaw, also interested in the business, died in 1900.

TRIBUTE OF RESPECT.

At a meeting of the board of trustees of the Habirshaw Wire Co., held on August 17, 1908, the following minute and resolutions were unanimously adopted:

On Saturday, August 15, 1908, at Saratoga Springs, New York, William Martin Habirshaw died in the seventy-fourth year of his age.

From early manhood Dr. Habirshaw occupied an honorable and distinguished position in both the business and scientific world. After retiring from the United States navy, where he served as an engineer, he began his career as an analytical chemist, and soon rose to the front ranks in his profession. He became a member of the Chemical Society of London, and of other scientific organizations both here and abroad.

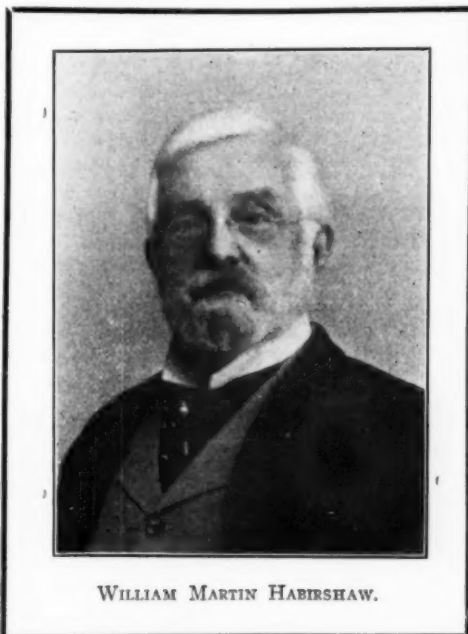
At an early date he perceived the commercial possibilities of electricity, and organized and became president and general manager of The India Rubber and Gutta Percha Insulating Co., a pioneer in this line. His sterling honesty and exceptional scientific ability gave the company a high standing. Its title was recently changed to that of the Habirshaw Wire Co. and he continued to maintain a most active interest in the affairs of this company up to the time of his death.

For the past five years he has been a sufferer from a disease which he knew to be incurable. During this long period he faced the inevitable with calmness and bravery. His honesty, hospitality, loyalty, and exceptional scientific attainments drew around him a large circle of friends to whom his death will come as a deep personal loss, in which we, his close associates and fellow members of the board of trustees of the Habirshaw Wire Co., fully share.

Resolved. That as a mark of respect for the character of William M. Habirshaw, and as an expression of our loss in his death, the works and general offices of the company be closed on the day of his funeral, Wednesday, August 19, 1908.

Resolved. That a copy of these minutes and resolutions be sent to his family.

Dr. Habirshaw took a keen delight in club life, and was an active member of the Union League, Century, Chemists, Electrical, New York Yacht and other clubs. He was a man of wide culture and liberal tastes; he was consulted frequently by leaders in electrical and chemical circles, and enjoyed the intimate friendship of the most distinguished men in them. At his table were entertained likewise authors, actors, artists, army and navy men, financiers and others, all of which classes appreciated him highly.



WILLIAM MARTIN HABIRSHAW.

The Analysis of India-Rubber.

DIE ANALYSE DES KAUTSCHUKS, DER GUTTAPERCHA, BALATA UND IHRER ZUSÄTZE. Mit einschluß der chemie der genannten stoffe. Von Dr. Rudolf Ditmar. Wien und Leipzig: A. Hartleben. 1909. [Paper. 8vo. Pp. viii + 288 + plates. Price, 10 marks.]

THOUGH much research work has been done in the analysis of india-rubber and compounding ingredients, and the chemistry of these substances, during the six years that have elapsed since the appearance of Dr. Weber's book, the records have been scattered through very many technical publications, accessible in their totality to only a few persons. That Dr. Ditmar should have undertaken a new collective work in this field, brought up to date, will be welcomed by all who are interested in the technology of rubber. In so far as the book is intended as an introduction to the subject, and to enable the chemist of general scientific education to handle analytical propositions in the rubber factory, Dr. Ditmar has achieved his purpose.

The author says in his preface that his book has had its origin in practice, but in parts of it sufficient account has not been taken of practical needs for the laboratory of a rubber factory. Many details as to general layout, apparatus, and tests that may be in every way sufficient for a school laboratory must be changed for a laboratory which is in constant touch with the needs and difficulties of manufacture. The main difficulty for the chemist in applying his science to the rubber business has always been the want of practical knowledge of factory operation, and with too much reason this lack often has prejudiced the rubber worker against scientific advice and supervision of the business. The fundamental causes of most difficulties in the factory cannot be detected by an occasional superficial insight into methods; the ability to apply the result of scientific research successfully to practical problems of manufacture can be obtained only by permanent close relation to and observation of all phases of factory practice. It is important to impress upon the young chemist that a familiarity with the factory, gained by research work based upon its difficulties, will be of greater value to him than any amount of learned theory which he does not know how to apply. A book on the practical analysis of rubber ought to bear more upon this point, and suggest a closer connection between theory and the solving of practical difficulties.

The first three chapters relate to the theory of india-rubber, gutta-percha and balata, based upon the most recent research. The compilation is well done, though perhaps the space devoted to each feature is not always proportional to its importance. Then follow 50 pages devoted to testing and the treatment of compounding ingredients. Comparatively little original information is given, and there is a failure at times to point out the specific qualities of compounds in reference to their practical application.

Chapter V, entitled "Analyse des Kautschuks," opens with plans for a rubber factory laboratory. It may be suggested that the author does not recognize sufficiently that such a laboratory should serve four distinctly different purposes: (1) A testing place for raw material, as a function of the purchasing department; (2) a testing place for manufactured articles, as a function of the sales department; (3) a controlling place for manufacturing processes, as a function of the manufacturing department; and (4) an experimental place for improvements and inventions under its own supreme management.

The most interesting and valuable part of the book, for the analytical chemist, is the compilation of the modern endeavors to find a direct method for the estimation of the rubber substance itself in vulcanized articles and a direct method for the rubber combined sulphur which could be depended upon in every case. None of these newer methods has proved so satis-

factory as to justify the rubber industry in changing materially its testing methods, which are still based for the most part upon Henriques and Weber. Among the sulphur tests the Eschka estimation by means of the magnesia mixture, which is much applied in America, and the useful Koneck rapid method receive scant treatment. Several conclusions as to the usefulness of testing methods for practical purposes must be accepted with reserve, partly because based upon only a few experiments, partly because the practice has no interest in results derived from these methods. The analysis of gutta-percha and of balata also receives attention.

The final chapter, on the technical testing of rubber articles for practical serviceability, is filled largely by the rather old investigation of Heinzerling and Pahl. The oxidation method of the author does not take sufficient account of the surface action and therefore is hardly as reliable as it appears in the record.

The too common fault of comparing vulcanized rubber samples on a wrong basis for technical serviceability is not pointed out strongly enough. It is essential to find the best conditions for each brand of rubber at first by a series of tests with one brand only, before comparing several brands. Even different consignments of the same brand will sometimes show different conditions. Certainly samples with different qualities should not be subject to the same heat, time, and compound tests with a view to getting an idea of their value.

The serial test of a single class of rubber for finding the best condition should be so arranged that it can be expressed conveniently by comparison curves, not taking a single figure of strength or elasticity as indicative, but an average valuation figure. This formula has proved satisfactory for this purpose:

$$\frac{\text{breaking strength} \times \text{stretch of break}}{\text{percentage of permanent set}}$$

Any convenient unit of size and time to be taken, but this unit of course constant for one whole investigation.

For arriving at such a curve it is of course essential to start with such conditions of heat, time, and amount of sulphur or other effective compound as are in the greatest possible conformity with practical conditions, changing only one function for the series simultaneously, keeping the other functions constant. Only by finding out in this way the best condition for each class of samples is to be obtained a comparison based on the results of every class, for the technical valuation of rubber.

While generally the book possesses the defects of lack of system and of too positive conclusions, especially when derived from results which do not take sufficient account of practical conditions, yet as a collective description of the latest research on rubber it is a meritorious work and will prove useful. Dr. Ditmar's fear of serious differences between the old and the modern rubber man is hardly justified, at least by conditions in America. A modern rubber chemist, who has gained the necessary practical knowledge, will meet only with support, coöperation and appreciation whenever he meets the intelligent superintendent or manager of a rubber factory, and these desirable relations will be improved, rather than otherwise, by the study of books like Ditmar's.

ERWIN MEYER, PH.D.

THE American Rubber Co. (Boston), who state that they own property in Cambridge assessed at \$233,400, and do an annual business of \$5,000,000, have filed a bill in equity in the Middlesex superior court to restrain various other factories named in their complaint from constructing and maintaining a railway in Binney street, Cambridge, alleging that the same would inconvenience the public and deprive the plaintiffs from a proper use of the street.

New Rubber Goods in the Market.

"GIBRALTAR" CLOTH INSERTION WATER BOTTLE.

ONE characteristic of this new cloth insertion water bottle, as will be seen from the illustration, is its shape, which is patterned after the all rubber styles rather than the flat edge cloth insertion bottles which for years have been on the market. This not only gives the "Gibraltar" a distinctive shape, but it insures full capacity, a very important feature. Another notable characteristic of this construction is the seam employed. It is made on the theory that cloth insertion fabric on cloth insertion does not make a sure connection. In the "Gibraltar" an all rubber contact has been arranged for the two sides of the bottle, this being reinforced by an all rubber strip over the seam, then a cloth insertion strip over the all rubber, and finally the outside all rubber binding over it. A special cement is used which makes it difficult to pull or even pry off the binding. The result is a triple reinforced seam, rendering it next to impossible for the bottle to leak at this point, generally recognized as the weakest part of a cloth insertion article. The stocks used in preparing the fabric are of the shades of color which have been found to be most popular. [The B. F. Goodrich Co., Akron, Ohio.]



"GIBRALTAR" WATER BOTTLE.

"PELVIC" EXTENSION HOT WATER BOTTLE.

EVERY physician finds frequent occasion to require a hot water bottle of special shape, and not a few makes are now on the



"PELVIC" EXTENSION HOT WATER BOTTLE.

market in which the conventional form of water bottle is departed from. The most recent addition to the list is illustrated here. Its peculiar form allows it to be bound directly to parts not reached conveniently by other appliances, though it may be worn on any portion of the body. The device is placed on the abdomen and the upper ends united behind, attached to the loop on the extension. The same principle of construction is applied to ice bags. [Bailey Specialty Co., No. 34 West Thirty-third street, New York.]

MORGAN & WRIGHT MOTORCYCLE TIRE.

THE increasing use of motorcycles in the United States has led the various tire manufacturing firms to give attention to the special needs of these machines in the matter of rubber equipment, thus following the example of the trade in Europe, where the use of motorcycles developed at an earlier date. Morgan &



MORGAN & WRIGHT MOTORCYCLE TIRE.

Wright (Detroit, Michigan) have added to their extensive line of products a corrugated motorcycle tire of the detachable, double clinch type. The casing is formed in shape to fit the rim, instead of being made flat, as usually is done; the inner tube also is distinctive, in that it is made of several plies of rubber instead of a single ply.

THE "FAULTLESS" RUBBER RETURN BALLOON.

THE rubber bubble illustrated not long ago in THE INDIA RUBBER WORLD, was a mighty fascinating toy. In the Rubber Return Balloon, however, the inventor gets up something that is even more fascinating. The rubber bubble after being blown up by the inflating pipe and thrown off always drifted down toward the



"FAULTLESS" RUBBER RETURN BALLOON.

floor. The return balloon, however, with its little kite tail is held in such position that it rises anywhere from 10 to 50 feet in the air, and when it is deflated comes back to earth. It is an ideal toy and one that is bound to be universally popular. [The Faultless Rubber Co., Ashland, Ohio.]

RUBBER IN "VIBRATORS."

THE remedial value of massage having become recognized so generally now as to no longer need argument, the question is how best to secure its benefits. Treatment by the highly trained professional human hand being not always available, mechanical substitutes have been invented that have the commendation of



MONARCH VIBRATOR NO. 1.

high medical authority and are coming into wide use. Like so many other modern devices, these depend for their value or practicability upon the employment of rubber, a considerable amount of which already is in demand for equipping the "vibrators." In the outfit known as the "Monarch" vibrator, of which some illustrations appear herewith, the idea is to attach the device to the electric lighting installation in the house, if there be



[Soft rubber teeth.]



[Hard rubber.]

MONARCH VIBRATOR APPLICATORS.

one. If not, vibrators are supplied which run on their own dry cells. It is this type which is shown in the largest cut—Monarch Vibrator No. 1. This weighs only one pound, complete, rendering it convenient to handle. Prominent in the picture is the "motor," with ebonized handle, with several feet of cord attached, which allows the motor to be taken out of the box for use. The rubber toothed attachment shown on the motor is one of half a dozen or more "applicators," each for the treatment of a particular character—for the body in general, for the eye or face, for the scalp, and so on. The two smaller cuts show (1) a soft rubber toothed applicator for facial treatment, and (2) a hard rubber applicator for body treatment. The applicator for the eye and light facial treatment is smaller, of special shape, and of extra soft rubber. [Monarch Vibrator Co., Jackson, Michigan.]

"TINY TOURISTE TOUCHE."

WHAT is probably the smallest douche yet placed on the market is shown in the illustration herewith, which exhibits the

device when put in shape for carrying in the pocket or handbag.

TINY TOURISTE
TOUCHE.

It consists of a pump, a nozzle, and a connecting rubber tube. Here the tube is shown wrapped about the nozzle, and both placed inside the pump, the two ends of which can be unscrewed. In this shape the whole is only 6 inches long and less than an inch in diameter, while the weight is only 3 ounces. Though so small, this device is referred to as being very effective, throwing a forceful spray, the energy of which may easily be regulated. The outer tube is a handsome nickel plated article, made by an experienced firm in the surgical implement trade. The whole is supplied in a rubberized pouch. It is protected by a patent granted to Charles Remhof. [The T.T.T. Manufacturing Co., Brooklyn, New York.]

A NEW HOPEWELL TIRE CASE.

THE Hopewell tire case is a continuous casing, which wraps around the tire to protect it from water, dust, grease, and the like. Since the inner diameter of the tire case does not have to pass over the outer diameter of the tire, as in some other makes, the inner portion of the case is made a perfect glove fit to the tire, and thus does not present a wrinkled appearance when in use. This line of tire cases has been on the market for some years, but an additional patent has been granted (United States, No. 881,411), which covers an improvement in the substitution of a spiral wound japanned



HOPEWELL TIRE CASE.

piano wire spring in place of the wire cord used formerly. This has been appreciated by the trade, so that sales this year are stated to be four times as large as before.

THE ACRE A GOOD INVESTMENT.

THE purchase from Bolivia of the Acre district appears to have been a profitable piece of business for Brazil. The indemnity paid, exclusive of the cost of the Madeira-Mamoré railway, now building, was £2,000,000 (£2,050,000, including bankers' commissions). Up to the end of 1907 more than this much was received by the Brazilian government in duties charged on the export of rubber from the Acre district—£28,525 in 1903; £121,013 in 1904; £556,716 in 1905; £570,505 in 1906; and £841,841 in 1907—totals, £2,118,401.

The Growing Field for Rubber Tires.

THE taxicab interest continues to grow rapidly in America as well as abroad. The incorporation of the American Taximeter Cab Co. was mentioned in the last INDIA RUBBER WORLD, with \$1,500,000 capital authorized, and planning to operate in New York, Boston, Chicago, Philadelphia and Washington. It is stated that the greater part of the capital has been subscribed, and orders have been placed for 400 cabs. The average cost is said to be \$2,000. The new vehicles are expected to be ready by October or November. Two hundred each will be built by the Garford Motor Co. (Elyria, Ohio), and the New Departure Manufacturing Co. (Bristol, Connecticut), the president of each company having an interest in the American Taximeter Cab Co. It is stated that five-year contracts have been made already with several of the best hotels in New York and the other cities named, and stands have been secured at the most important railway terminals.

The management call attention to a contract that has been made with a rubber factory to equip the cabs with pneumatic tires at a fixed cost of 2 cents per mile, which "obviates the necessity of tying up a large amount of capital in tires." It is the plan of the company, as of the other taximeter concerns both in America and in Europe, that the chauffeur shall furnish his own gasoline, and shall receive 20 per cent. of the gross earnings of his cab in lieu of other wages. The company plan later to put into service a number of delivery motors, for which contracts will be made with large department stores.

The board of the new company embraces beside the two automobile manufacturers mentioned already, several New York hotel men, the president of the Erie railroad, an official of New York's greatest grocery corporation, and other men prominent in business affairs. The active manager is L. H. French, the vice-president, and the offices are at 31 Union Square, New York.

The articles of association of the New York Taxi Cab Co., Limited, appeared in the Paris *Bulletin Annexe au Journal Officiel* of August 3, from which it is inferred that application will be made for listing the company's shares on the Paris bourse.

G. Winthrop Sands, of New York, who was killed in an automobile accident at Poissy, France, on July 29, was one of the three directors in America of the London company—The New York Motor Cab Co., Limited—operating a taxicab service in New York. [See THE INDIA RUBBER WORLD, July 1, 1908—page 328.] Mr. Sands was a stepson of William K. Vanderbilt, Sr., which may account for Mr. Vanderbilt having been reported to have an interest in the New York Company.

TAXICAB INTERESTS IN EUROPE.

THE Electric Taxicab Co., Limited, with £300,000 [= \$1,459,950] capital, has been formed to operate in London a service of electric taxicabs, made by and under the patents of the Electromobile Co., Limited, formed in 1902 with £50,000 capital, and referred to as having been successful in the production of electric vehicles. The new company plan to begin with 100 cabs.

The Consolidated Motor Cab Co., Limited, is a new London company, capitalized at £100,000 [= \$486,650], and formed to take over British Motor Cabs, Limited, and extend the business. The latter company was formed last year for experimental purposes, and has run 10 taximeter cabs with such good results as to lead to the formation of a larger new company, which purposes at once to put in operation 190 additional cabs. The average daily takings of the British Motor Cabs, per car, during June, is stated to have been £2 5s. 4d. [= \$11.02]. Figuring on only £2 per day the new company's prospectus promises net earnings from running 200 cars of £34,050 [= \$165,704.32] per year.

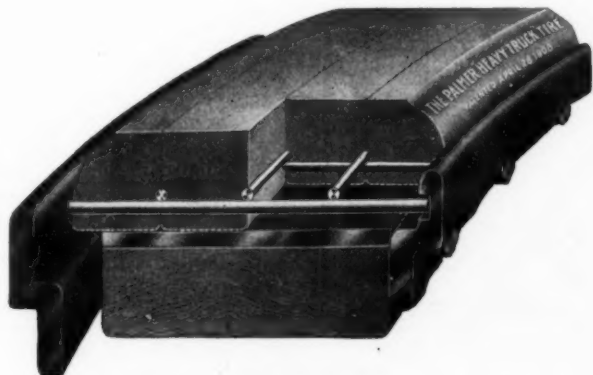
The Provinces Motor Cab Co., Limited, obtained delivery of their first cabs in March. They had in service an average of 31 per day in April, 67 in May, and 98 per day in June, and claim to have earned a profit. They hope within a year to have cabs in operation in every British town of importance.

At the second annual meeting of Delahaye & Co., Limited, a French motor car business which has been organized as a British company, it was stated that 200 taxicabs of their make were in operation in Paris and the number was daily increasing; they had 100 in New York, and they had been introduced in many French cities.

AMERICAN AUTOMOBILE STATISTICS.

THE number of automobiles in the United States is estimated by the general manager of the American Motor Car Manufacturers' Association at about 145,000, of which about 47,000 were sold during 1907 at a valuation approximately of \$100,000,000. New York city alone boasts of 20,000 automobiles. The number of automobile factories in the United States is stated by the same authority at 200, of which at least 125 may be said to be producing machines in quantities. The employees number 58,000, without including those engaged in making a great variety of accessories, large and small.

The secretary of state of New York informs THE INDIA RUB-



A NEW HEAVY COMMERCIAL TRUCK TIRE.

[Invented by H. A. Palmer, Akron, Ohio. Made in annular sections with transverse holes for cross rods near the base. Between the annular sections and over or above the cross rods are circumferential wire rings.]



"REPUBLIC" DETACHABLE TIRE AND RIM.

[For automobiles. Made by The Republic Rubber Co., Youngstown, Ohio.]

BER WORLD: "Up to June 30, 1908, there have been 57,857 statements of owners of motor vehicles filed in this office. However, this does not show that there are that number of machines being operated in New York State, as 20,000 or more of these statements have been canceled. There were 8,522 statements filed last year from January 1 to June 30, and 8,246 filed this year from said dates."

The number of automobiles registered in New Jersey under the law of 1906, between April 12 and December 31 in that year, was 13,759. A new registration being required each year, the total number in 1907 was 17,619. The registration for the first half of 1908, to July 1, was 11,532, against 8,521 during the first half of last year.

The registration of automobiles is required in every state, but there is a lack of uniformity in systems, and it is practically impossible, in most states, to learn the number under registration. A suggestion has been made for a uniform system of registration throughout the country, for which various advantages are claimed.

AUTOMOBILES IN GERMANY.

THE number of motor vehicles in Germany on January 1, 1908, was stated officially at 36,022, of which 14,671 were automobiles, 1,778 commercial vehicles, and 19,573 motor cycles. The increase in the number of all such vehicles in the city of Berlin during the year appears to have been only 6, although the increase throughout the empire was 33 per cent.—the number on January 1, 1907, being 27,026. The number of foreign owned cars which entered Germany for touring purposes during 1907 was 5,686.

TIRES AND TIRE MAKERS.

A COMPETITION for mechanically operated tire inflators for automobiles will be a feature of the coming Paris automobile show in the Grand Palais. Any type of apparatus is eligible to compete which does not use compressed air prepared in advance.

Mr. Fred C. Hood, of the Hood Rubber Co. (Boston), took with him on a recent visit to Europe an automobile equipped with his firm's "Shawmut" tires, which withstood 2,900 miles of touring without reinflation, which is not a bad showing for Boston air.

The tires made by the long-established factory of O. Englebert fils et Cie., at Liege, Belgium, are represented in the United States by the William Sanford Co., in Philadelphia.



"AMERICAN" PUNCTURE PROOF MOTOR TIRE.
[American Motor Car Tire Co., Mansfield, Ohio.]



"AMERICAN" PUNCTURE PROOF MOTOR TIRE.
[Sectional view, showing compartments.]

The use of solid rubber tires on the better class of carriages is increasing in Copenhagen, according to the American consul, Mr. Frank R. Mowrer. The introduction of taximeter cabs is leading to an increased demand for pneumatics. Solid tires are imported mainly from England. American made solids are referred to as being too soft, and while relatively cheaper at the factory than British makes, the transportation charges offset this advantage.

A tire endurance test of interest resulted from a tour of 3,000 miles across Queensland, by the Hon. J. W. Blair, of that country, in a Panhard car, fitted with "Continental" tires. He covered the whole trip on one complete set of tires, which at the end of the journey showed very little wear, though the roads in many cases were very rough.

Rubber tires of American make, if imported into France, pay a duty of 90 francs per kilogram [= \$17.37 for 220 pounds], while tires from other countries are dutiable at only 70 francs [= \$13.51] for the same weight. In consequence, according to the American general consul at Marseilles (Mr. Robert P. Skinner), France imports very few tires from the United States.

The American consul general at Marseilles reports that the use of pneumatic tires with chains woven about them, such as are seen in New York, would not be permitted in French city streets. But he reports an extensive use of nail studded tires, which he thinks are doing incalculable damage to the roads.

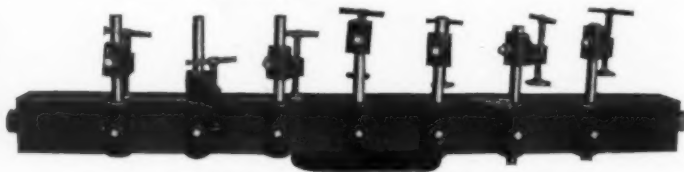
ELEAZER KEMPSHALL IN EUROPE.

IN London *Motoring Illustrated* is pictured a street scene showing a row of "sandwich" men, who, in addition to bearing over their heads boards advertising the Kempshall Tyre Co., wear motoring coats and parade the streets with Kempshall tires flung over their shoulders. A procession of these men in the picture mentioned is headed by a motor car, one of the occupants of which is described by our contemporary as "Colonel Eleazer Kempshall, inventor of the tire and the golf ball which also bears his name."

ANYBODY CAN USE "RUBBER."

THE United States circuit court of appeals at St. Louis, on August 14, handed down a decision in the case of the Trinidad Asphalt Co., a corporation of Missouri, and the Standard Paint Co., a corporation of Virginia. The suit grew out of an article put upon the market in 1904 by the Standard Paint Co. called "Ruberoid." In 1904 the Trinidad Asphalt Co. put out a similar line of goods and marked it "Rubber O." The Standard company enjoined the Trinidad from using the name. The lower court sustained the contention. An appeal was taken by the Trinidad company and as a result the decree was reversed. The appellate court held that "rubber" belongs to the public and that any one can use it.

THE Leyland and Birmingham Rubber Co., Limited, report trading profits for the year ended June 30, 1908, of £37,094 [= \$180,519.55]. The directors recommended a dividend for the last six months of 5 per cent., making, with the interim dividend, 7½ per cent. for the year. The carry over is £7,874, against £1,262 last year.



EXCELSIOR INNER TUBE STEAM VULCANIZER.

[Will vulcanize at one setting long cuts, or severe punctures at a time.
John Wishart Machine Works, Inc., Chicago.]

THE RUBBER INDUSTRY IN AKRON.

BY A RESIDENT CORRESPONDENT.

THE announcement of rubber tire prices due on September 1 is looked forward to with interest, especially as a slight reduction is confidently expected. The rubber tire trade the past year has been heavy, notwithstanding the flat business conditions, and although the end of the 1908 season is near, the plants are still quite busy, many of them running at night.

The experts of the Nederlandsch Guttapercha Maatschappij (Netherlands Gutta-Percha Co.), manufacturers of automobile tires at Singapore [see THE INDIA RUBBER WORLD, July 1, 1907—page 318] have been investigating the different types of tires in the market, and have decided to manufacture the Swinehart tires, according to a statement made by the Swinehart Clincher Tire and Rubber Co. This company claims that 90 per cent. of all solid rubber tires in the world are manufactured under the Swinehart patents—either side wires or clincher—though the claim is disputed by competing companies.

Some interesting figures regarding the extent of the Akron rubber industry have been compiled by W. A. Johnston, president of the Rubber Products Co. According to them the twelve principal rubber manufacturing plants of Akron, including Barberton, in 1907, had an output of \$33,000,000 worth of goods, which is equal to one-third of the entire rubber goods output of the United States five years ago. The capital invested in these rubber factories is placed at \$23,000,000; expended for labor annually, \$9,000,000, or \$30,000 daily. These last figures do not include what is expended in machine shops for rubber machinery, nor that expended for merchandise, printing, shipping, and other like purposes. The total of \$33,000,000 includes the product of the hard rubber and reclaiming plants. About one-third of it relates to rubber tires alone. About 10,000 people are employed in the Akron rubber industry. In reference to the rubber worker and a "rubber" city, Mr. Johnston says: "We have one of the best cities in the United States, and it is made so because rubber factories are better for a city than iron, steel, or glass, as the rubber worker is paid good wages with steady work the year around, while the iron and glass business is dulled by many shutdowns—throwing thousands out of work for months at a time—which results in rubber workers as a class being better citizens."

The rubber manufacturers of Akron are taking an active interest in the formation of a chamber of commerce, something that this city has been sadly in need of for years. The chamber has been organized with 60,000 shares, insuring an income of \$6,000 a year. O. C. Barber, millionaire manufacturer and a director in The Diamond Rubber Co., has been elected president, and A. H. Noah, treasurer of the Diamond company, and C. B. Raymond, of The B. F. Goodrich Co., are on the board of directors, Mr. Noah having been chosen chairman. Other rubber men on important committees are the following: Transportation—E. L. Tragesser, The B. F. Goodrich Co., chairman; H. B. Bryant, The Diamond Rubber Co. Municipal—Joseph Dangel, American Hard Rubber Co., chairman. Industries—E. C. Shaw, Goodrich company, chairman; A. H. Marks, Diamond company; H. S. Firestone, Firestone Tire and Rubber Co. Publicity—James Braden, Diamond company; E. C. Tibbetts, Goodrich company.

The Palmer-Hawkins Rubber Tire Co. has been incorporated, under the laws of Ohio, with the right to manufacture rubber goods of all kinds, but the primary purpose is to put upon the market a new heavy motor truck tire patented by H. A. Palmer, who is president and general manager of the company. Mr. Palmer is president of the Akron city council, and has had many years experience in the rubber business, being actively engaged in the manufacture of both solid and pneumatic tires. His invention of this sectional tire is the result of years of constant study as to the best practical method of overcoming the difficulties encountered

in the use of heavy motor truck tires. A. W. Hawkins, a prominent business man and manufacturer, is secretary and treasurer of the company. The new tire is regarded as having an important future.

Another new Akron rubber company is the Empire Rubber Manufacturing Co., organized by C. W. Wickline, M. G. Snyder, William J. Yeager, Forest Firestone, and Fred J. Gostlin. The company will make rubber goods, chiefly automobile supplies and rubber cements, at a factory at No. 200 East Exchange street, with offices in the Walsh block.

The annual outing of The Diamond Rubber Co. was held at Meyers lake, Canton, on July 25, when five special trains were run over the Baltimore and Ohio railroad, and many went by interurban cars. It was one of the largest picnics in the history of the company, and the day passed off without an accident. A sport program occupied the day. The annual outing of The B. F. Goodrich Co. occurred a week later, on August 1, and over 15,000 people were on the Silver lake grounds, where the picnic was held. The company furnished tickets to and from the grounds, and included admission, one boat ride, and dancing. A sport program began in the forenoon and lasted all day, concluding with a balloon ascension in the evening. Trap shooting was another unusual sport. The Alkali and American Hard Rubber companies joined in with the Goodrich company.

At the annual meeting of the Firestone Tire and Rubber Co. on August 26, it is understood that President Firestone will report an increase in business of 33 per cent. over last year. The company are preparing to add to their plant a four-story building 125 X 75 feet.

The Aladdin Rubber Co., whose plant at Barberton burned a year ago, resumed operations on August 1. The plant has been rebuilt, and sufficient machinery placed in it to double its former capacity. The company has been reorganized, but James Christy, the chief factor financially before, remains as president and general manager. The company is getting started again on a large reclaiming business.

Mr. Walter Hazlett, manager of the Akron Rubber Co.'s office in Pittsburgh, and Miss Bessie Harry, of Akron, were married in this city on August 10.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

THE merchants in the rubber lines assert this month that business is fairly good, and there is a show of some improvement, which they believe to be permanent. Many things point to advancement on the Pacific coast. Railroad construction is being carried on extensively, not only in and about San Francisco, but throughout the interior, where interurban electric railroads are becoming very common. Building is going on steadily and extensively in San Francisco. Business is better in nearly all lines than it was two months ago. It is not anticipated that there will be much in the way of milling business, although there is to be a meeting of the mill owners shortly to discuss the advisability of having a winter run, in which case there will be considerable business in this field for the San Francisco rubber houses.

Mr. W. F. Bowers, of the Bowers Rubber Works, introduced an innovation on this coast by giving a big picnic to all of their employes. The picnic took place on August 1, and the men were given full pay for the day. Mr. Bowers chartered the steamer *Carolina*, and took the employes—nearly 200—up the Sacramento river to one of the islands. There they had a big banquet prepared by a special caterer. A band on board supplied music, and there was dancing aboard and ashore. The party returned at 10 o'clock in the evening. This outing was called the first annual picnic, which indicates that such occasions are to be of regular annual occurrence.

Messrs. Kanzee and Ralph, proprietors of the Phoenix Rubber Co., are now busily engaged in removing their works and offices from temporary quarters to their new location at Nos. 168-172 First street, where they have leased a 4-story brick building and basement. The top floor will be used for factory—mold work, etc.—the next for their mechanical department, the next for their tire department, and the ground floor will be devoted to offices and leather belting, and samples. This firm is turning out its new patent disinfectant toilet seats in large numbers.

The Garlock Packing Co., at No. 670 Howard street, report a fair increase in business from their down town location.

C. R. Winslow & Co., No. 658 Howard street, agents for the Boston Rubber Shoe Co., and lines of rubber and oiled clothing, are now settled in their new four-story and basement brick building, and report that the outlook for fall business is favorable.

C. E. Mathews, Pacific coast manager of The Diamond Rubber Company, has just returned from a trip to Los Angeles, where he attended to the enlarging and rearranging of the branch store in that city. Business has increased to such an extent that larger quarters became a necessity. The new store is located at No. 1207 South Main street.

The Pacific Mill and Mine Supply Co. have moved to new and more commodious quarters at No. 516 Mission street.

The Western Belting and Hose Co., of this city, now have the Pacific coast agency of the Manhattan Rubber Manufacturing Co. (New York).

Joseph V. Selby, Pacific coast representative of the Boston Woven Hose and Rubber Co., reports business generally as fair. Mr. Selby is president of the Western Mechanical Rubber Goods Association, and he anticipates a renewal of the regular monthly meetings of this organization at an early date.

Mr. H. C. Norton, president of the Pacific Rubber Co., reports a little improvement in business.

Mr. W. J. Gorham, of the Gorham Rubber Co., will return from his Eastern trip about the first of September. Mr. Sargeant reports that everybody feels that trade is in a better condition than it was a short time ago. Mr. Parish is on his way to Japan, China and Manila, on a trip which will last two or three months. William B. Heckman, sales manager, is on his Eastern trip.

Maurice Gibson, formerly with the Sterling Rubber Co., is now employed with The Fisk Rubber Co.

Mr. Perkins, president of the Sterling Rubber Co., states that orders are coming in more freely now than they have for a long time past.

Mr. W. D. Newerf, manager of the branch of the Goodyear Tire and Rubber Co., at Los Angeles, has returned to that city from the East. At Akron he attended the conference of the Goodyear agents, held for the purpose of discussing the policy of the company during the coming year.

A GOOD BOOK ON BRAZIL.

THE BRAZILIAN YEAR BOOK, ISSUED UNDER THE PATRONAGE of the Brazilian Government. First issue—1908. Compiled and edited by J. P. Willeman, editor of *The Brazilian Review* and Director of the Commercial Statistical Service of Brazil. Rio de Janeiro; 1908. [Cloth. 8vo. Pp. xxiv + 777. Price, 2 guineas = \$10.22.]

THE comprehensive character of this book and its general excellence could hardly have been more marked after years of effort, although it is, as stated in the title, the first yearly issue. Mr. Willeman, however, as editor of an important financial paper at the Brazilian capital for a number of years, has become so well informed in regard to the financial, commercial, and industrial conditions of the nation that he has addressed himself to the compilation of this work as anything but a novice. That Brazil is no unimportant factor in the world's progress, even a cursory glance at this volume will show. In the matter of area it is only slightly less than the United States. The distance from the national capitol to Manáos, the rubber center, is 3,204 miles, and there are other places of commercial importance in the coun-

try even more remote. There is a much wider range of commerce in Brazil than many readers probably are aware of. The export list is not so large in the number of items, but practically everything manufactured seems to be included among the imports. Speaking of exports, the statistics of rubber are given from 1827, when the transactions included only 69,003 pounds, of the estimated value of £1053 [= \$5,124.42]. The development of planting as well as of commerce and transportation throughout Brazil has been promoted largely with foreign capital, mainly through joint stock companies, of which an extensive list is given in this book with a most satisfactory fullness of details as to their conditions. Such companies, for instance, are the American companies now improving the harbor at Pará and building the Madeira-Mamoré railway. Ample details are given likewise regarding the public debts, which are created by the several states rather than by the federal government. Any one wishing to become acquainted with actual conditions in Brazil cannot hope to find in any dozen other sources so much information so well arranged and apparently so authentic as in this volume. A good map of the country is included, and the appearance of the book generally is exceedingly pleasing.

NEW TRADE PUBLICATIONS.

FRANCIS SHAW & CO. (Bradford, Manchester, England), have issued an illustrated catalogue of Rubber Plantation Machinery, which is the most extensive publication of the kind that has yet appeared, and affords marked evidence of the growing importance of rubber culture and the new demand for mechanical appliances that has resulted. In addition to standard washing machines, breaking-up machines, crepeing machines, and the like, there is shown a small washing or sheeting machine for experimental work; also blocking presses, drying stoves, and power attachments. [9½" x 7¼". 24 pages.]

BARTON PACKING AND RUBBER CO. (San Francisco), a new firm, issue a catalogue and price list of Belting, Packing, Hose, Molded Rubber Goods and General Mill Supplies, of which they carry in stock lines from leading manufacturers, in addition to special packings made in their own factory. [5" x 7¾". 127 pages.]

LEWIS P. ROSS (Rochester, New York), issues an illustrated net price catalogue, for 1908-09, of rubber footwear, including the Goodyear Glove and other leading manufacturers' brands, and several special brands which the house of Ross has made popular. [5" x 8". 44 pages.]

THE 1908-09 Catalogue of THE OHIO RUBBER CO. (Cleveland and Cincinnati) bears the title "Buckeye Brand" Waterproof Clothing, and like its predecessors is interesting and attractive. [5½" x 7¾". 24 pages.] It is accompanied by a Net Price List for dealers.

ALSO RECEIVED.

A. J. REACH Co., Philadelphia. = Fall and Winter Sports. 1908-09. 32 pages.

Barrett Manufacturing Co., New York. = Tarvia, the Dust Layer. 24 pages.

The Perkins-Campbell Co., Cincinnati. = The Famous Twentieth Century Tire Protectors for Automobiles. 16 pages.

Frank Mossburg Co., Attleboro, Massachusetts. = Metal Reels and Spools. 24 pages.

Queen City Supply Co., Cincinnati = Supplies [rubber and other; for machinists, mills, etc.] 16 pages.

The Wire and Telephone Co. of America, Rome, New York = Copper History (as told in prices). 4 pages.

The Western Specialty Manufacturing Co., New York = "The Little Wonder" Syringe and Hot Water Bag combined. 12 pages.

The Eastern Coupling Co., Camden, Maine = The Anderson Coupler. 20 pages. Catalogue No. 2. 31 pages.

Parker Brothers, Inc., Salem and New York = The Story of Diabolo. 12 pages.

The Western Specialty Manufacturing Co., New York = "The Little Wonder" Syringe and Hot Water Bag combined. 14 pages.

The Fisk Rubber Co., Chicopee Falls, Massachusetts. = A Word to the Wise. [A Few Words of Advice on the Care and Repair of Tires.] 20 pages.

News of the American Rubber Trade.

SHARES OF RUBBER GOODS COMPANY.

THE governing committee of the New York Stock Exchange on July 29 directed the admission to the list of 34,139 shares of the 7 per cent. cumulative preferred stock of the Rubber Goods Manufacturing Co., of the par value of \$3,413,900. Originally all the shares of the Rubber Goods company were admitted to the "unlisted" department of the Stock Exchange. From time to time such shares of the Rubber Goods company as were acquired by the United States Rubber Co.—the merger of the two companies dates from 1905—ceased to be traded in on the Stock Exchange, until there remained only 34,139 shares of preferred stock, the quantity above referred to. These have now been transferred from the "unlisted" to the "listed" department of the Stock Exchange. From the above it may be inferred that the share capital of the Rubber Goods Manufacturing Co. has been acquired as follows:

	Total.	Acquired.
Preferred stock.....	\$10,351,400	\$6,937,500
Common stock.....	16,941,700	16,941,700
Total.....	\$27,293,100	\$23,879,200

The directors of the Rubber Goods Manufacturing Co., at a meeting held on July 16, 1908, in connection with listing their shares on the Stock Exchange, "Resolved, that this company shall not speculate in its own securities or in those of its constituent companies, or permit similar speculations by any of its constituent companies."

* * *

It is understood that application has been made for listing the securities of the United States Rubber Co. upon the Paris bourse. This, it is said, will be the first instance of American industrial shares being traded in on the French market under like conditions. While no authorized statement has been made public it is gossip in financial circles that the opening of continental markets to those securities is expected to lead to the transfer of \$10,000,000 or more of them to Europe.

* * *

THE refunding of the debenture bonds of the Boston Rubber Shoe Co., due on August 1, was carried out as intimated in the last annual report of the United States Rubber Co. [See THE INDIA RUBBER WORLD, June 1, 1908—page 299]. Of the \$4,500,000 in bonds of the new issue underwritten by the bankers it is

understood that all except about \$3,500,000 were taken by holders of the old bonds.

PARKER, STEARNS & CO.'S NEW FACTORY.

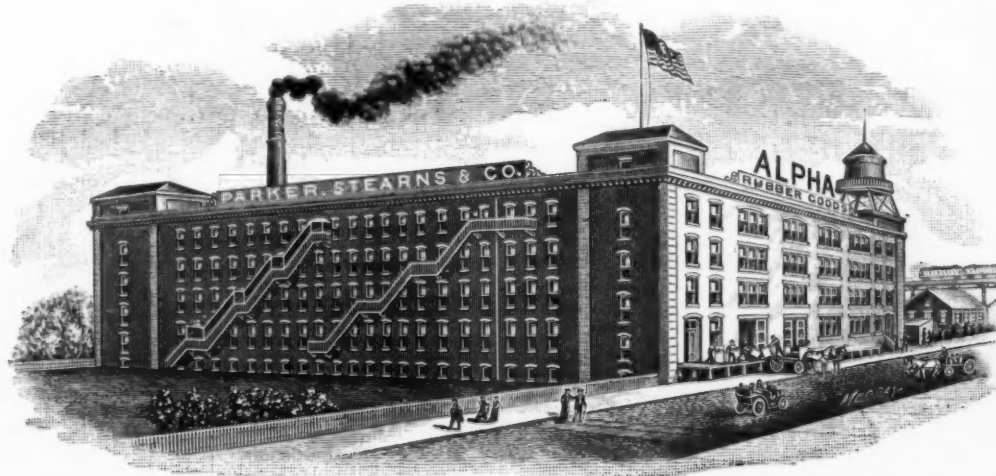
THE new factory of Parker, Stearns & Co. (New York), in Brooklyn, in which they expect to be installed early in November, is one of the completest and best equipped rubber goods plants yet projected. It is a four-story brick building with a light, spacious basement, 196 feet long by 110 feet in its extreme width. It is of the latest mill construction throughout. It has for water supply a huge cistern fed by an artesian well, the water being of exceptional purity. Besides this cistern there are two roof tanks, holding some 16,000 gallons, and another one building for some 10,000 gallons more. There is also city water, if it is needed. The factory has its own electric lighting plant, is sprinkled throughout and equipped with electric elevators and electric motors for the small machines. The power equipment consists of two 150 H.P. boilers, and another 200 H.P. boiler is being installed. The engines are one 100 H.P., one 125 H.P., and one 200 H.P. Corliss, with foundation for another of 200 H.P. The plant is located in a part of Brooklyn where the very best of help may be secured; it is convenient to the Long Island Railroad, and is easily reached by the Brooklyn Elevated trains.

The business of the firm, now established nearly thirty years, has outgrown the premises so long occupied in South and Water streets, in the borough of Manhattan, New York, and which eventually will be vacated altogether.

JENKINS RUBBER CO.—FIRE.

THE main building of the Jenkins Rubber Co.'s factory, at Elizabeth, New Jersey, was destroyed by fire early in the morning of August 6. The offices of the company and an adjoining building in which was stored \$50,000 of rubber, were saved. The engine house was also saved in part, but the machinery was badly warped by the heat. It is not clear how the fire originated. The insurance carried amounted to \$116,000, which, it is understood, will cover the loss. The company will at once rebuild, on the same site, with twice the former capacity.

The business of this company grew out of the Tuttle Rubber Works (Holyoke, Massachusetts), the whole output of which was taken by Jenkins Brothers, an extensive packing firm of New



NEW RUBBER FACTORY OF PARKER, STEARNS & CO., NEW YORK.

York. On the death of the late John H. Tuttle, in 1894, the Holyoke factory was offered for sale at auction and purchased by the Jenkins firm, who continued it in operation under the name of Jenkins Rubber Co. In 1897 the rubber factory was transferred to Elizabeth, N. J., ground having been bought and buildings erected for the purpose, and the Jenkins Rubber Co. became a corporation under the laws of New Jersey. Its business has continued to be the production of rubber valves and the like for the trade of Jenkins Brothers.

MR. MINER'S NEW RUBBER FACTORY.

AN extensive new factory building which has been in course of erection at Granby, Quebec, for some weeks past, has been the object of much local interest, but until within the past month no public announcement was made of its purpose. On a report coming out that it is being erected by Mr. S. H. C. Miner, for a rubber footwear factory, great satisfaction was expressed by the Granby people, in view of the success of all of Mr. Miner's enterprises, not the least important of which, in the past, had been in the rubber industry. At last accounts the first story of the main building had been constructed. The Birmingham Iron Foundry was mentioned as having been given an important order for machinery, and plans were being made for the installation of electrical equipment.

THE VICTOR RUBBER CO. REBUILDING.

THE Victor Rubber Co. (Springfield, Ohio), whose factory at Snyderville was burned recently [see THE INDIA RUBBER WORLD, August 1, 1908—page 383], have commenced the construction of new factory buildings at a new location, within the city of Springfield, and expect to have the plant in operation by November 1. They have bought land enough to permit of the one-story plan of construction throughout, the buildings being of concrete, with concrete floors, steel trusses, and fireproof roof. The location with respect to railroads is such that all goods can be received or shipped without the delay and cost of drayage. The machinery and power plant will be the most modern and efficient that the market affords.

FROM CHICAGO TO SAN FRANCISCO.

MR. JOHN H. BROWN has retired from the position of associate manager at Chicago of the Gutta Percha and Rubber Manufacturing Co., after having filled it just 25 years, to accept an important position with the same company on the Pacific coast. At the Union League Club, in Chicago, on August 17, a lunch was given to Mr. Brown by his friends in the rubber trade, the occasion being an entire surprise to him. The meeting at the club was entirely informal, but Mr. Brown thanked his contemporaries in a feeling speech, and the meeting developed into a love feast in which many kind things were said of the guest and many stories told of old associations and experiences in Chicago. Hardly a rubber house in Chicago is existing to-day under the same name and management as at the time Mr. Brown entered upon his duties 25 years ago. Many of the jobbing houses have retired from business, and but few of the "old guard" remain.

APSLEY RUBBER CO.—IMPROVEMENTS.

THE Apsley Rubber Co. (Hudson, Massachusetts) have installed grates under their factory boilers for the burning of hard coal screenings instead of soft coal, with satisfactory results in the matter of fuel cost and otherwise. All the draught for the fire is blown by steam, instead of obtaining it from doors underneath as formerly. In fact, the doors under the firebox are closed all the time.

MR. L. D. APSLEY, president of the Apsley Rubber Co., has been on a business trip through the West, going as far as Seattle, in connection with the important Pacific coast interests of his company.

The factory of the Apsley Rubber Co. was visited lately by a party of salesmen from the important shoe firm of De Cau Brothers Co., of Philadelphia, who are distributors of the Apsley company's footwear. The visitors were entertained by President

Apsley, of the company, assisted by Treasurer Loughton, the program including dinner and attendance at a Boston theater in the evening.

THE FEDERAL RUBBER CO. BUSY.

THE Federal Rubber Co. (Milwaukee, Wisconsin), report that of late it has been necessary to run their factory overtime, to take care of the orders received for sheet packing, horseshoe pads, and automobile inner tubes.

About 160 employés of the Federal Rubber Co. enjoyed their annual outing on August 1, at Hilgen's Spray Park, Cedarburg, Wis. The day was spent in athletic sports, boating, dancing, etc., to the pleasure of all concerned.

E. L. Holly, who has become connected with the sales department of the Federal Rubber Co., formerly held a similar position with The Diamond Rubber Co.

MILFORD RUBBER CO.—LIQUIDATION.

THE Milford Rubber Co. (Boston), the closing of whose waterproofing plant at Milford, Massachusetts, was reported last month, have presented to the superior court in Boston a petition asking for the privilege of dissolution. The company are stated to have no indebtedness, and the directors at a regular meeting decided to discontinue business. The order of notice is returnable before the court on September 7. A report that the company's factory would be removed to Worcester, Mass., appears without foundation.

TRADE NEWS NOTES.

THE fortnightly meetings of the Rubber Reclaimers' Club, at the Hotel Belmont, in New York, continue to be well attended, with pleasing and satisfactory results. At one of the recent meetings the usual program was departed from, and the members were the guests of one of their number at Point Shirley Club, Winthrop, Massachusetts.

The patent controversy, long in the courts, regarding pin hose racks between C. M. Howard, Washington, D. C., and the W. D. Allen Manufacturing Co., Chicago, has been decided by the United States circuit court of appeals in favor of the W. D. Allen Manufacturing Co.

The factory of the American Rubber Co. (Boston) was closed on August 12 for a two weeks' vacation and inventory.

The Bentley & Olmstead Co., large distributors of rubber and other footwear at Des Moines, Ia., are enlarging the branch which they have maintained for a year past at Wichita, Kansas.



THE RUBBER TRADE IN CANADA.

[Photograph taken in front of the factories of The Canadian Rubber Co. of Montreal, Limited, showing some of the officials of the company in the large automobile used in calling upon the Montreal tire trade. In the large automobile used in calling upon the Montreal tire trade. In the tonneau is Mr. Frank A. Paulin, manager of the tire department. Those in the rear seat (counting from this side) are Mr. J. C. Nicholson, manager of the general rubber goods department; Mr. J. M. S. Carroll, manager of the Montreal sales branch; and Mr. F. E. Partridge, mechanical factory superintendent.]

OFFICERS OF THE CONTINENTAL RUBBER CO.

THERE have been some changes in the list of officers of the Continental Rubber Co. (New York), following the resignation as president of Mr. Howard Page, who has gone to Europe for a long vacation. Mr. Page remains on the board, however. The officers now are:

President—WILLIAM H. STAYTON (formerly vice president).

Vice President and Treasurer—EDWARD B. ALDRICH. (Treasurer from the beginning, and now filling two offices.)

Secretary—C. B. REID.

General Manager [a new office]—WALTER DUTTON (formerly auditor of the company).

The same official list applies to two other corporations: (1) Continental-Mexican Rubber Co., having in charge the manufacturing interests in Mexico of the Continental Rubber Co., and (2) Compania Ganadera y Textil de Cedros, a cattle and fiber company operating on the hacienda "Cedros" in the Mexican state of Zacatecas.

A CORRECTION.

THE Atlantic Rubber Co. (Hyde Park, Massachusetts), through an inadvertence, was mentioned in THE INDIA RUBBER WORLD in July as being engaged in the manufacture of rubber clothing. Their principal business is the rubber-proofing of all kinds of fabrics, including single, double and triple textures; rubber heels and molded specialties; rubber sheeting, dress shields, bathing caps and various toilet specialties. The present company was incorporated under the laws of Massachusetts in January, 1908. F. H. Stratton is president, Alfred A. McLaren treasurer, and S. W. Culver, clerk. The factory and principal offices are located at Hyde Park.

NEW GOODRICH PREMISES IN NEW YORK.

THE B. F. Goodrich Co. (Akron, Ohio) have purchased property in New York, upon which they purpose erecting a large building for the purposes of their branch in this city. The purchase was made from the Marsh estate, and embraces Nos. 1776-1778 Broadway, at Fifty-seventh street. The insignificant structures now on the ground—irregularly shaped and measuring 53.10x132.1 and 50x100.5—will be replaced probably by a six-story modern structure.

NEW INCORPORATIONS.

AMERICAN Rubber Reclaiming Co., Inc., June 30, 1908, under the laws of Pennsylvania; capital authorized, \$100,000. Incorporators and directors: John R. Livezey (president); Joseph R. Livezey, William A. Flanagan, William R. Taylor and John Oxford (treasurer). The new company have acquired the business of the Manufacturers' Co., reclaimers of rubber by a non-acid process, with mills at Germantown and Kensington, Philadelphia.

Palmer-Hawkins Rubber Tire Co., June 22, 1908, under the laws of Ohio; capital, \$1,000. Incorporators: M. R. Palmer, N. M. Palmer, George N. Hawkins, E. P. Otis, E. E. Otis—all of Akron, Ohio.

Tire-Life Co., July 6, 1908, under the laws of Delaware; authorized capital, \$500,000. Incorporators: William H. Sterling and Montaigne M. Sterling, Brooklyn, N. Y., and Samuel G. Meetser, New York city.

Perfection Emergency Tire Co., licensed August 10, 1908, under the laws of Illinois; capital, \$25,000. Incorporators: G. C. Grable, W. R. Hartley, and D. W. Norris.

National Insulite Co., licensed August 4, 1908, under the laws of Illinois; capital, \$25,000. Incorporators: A. H. Mikesell, A. M. Scott, and John K. Newhall. Principal office: Aurora, Ill.

Kerite Insulated Wire and Cable Co., July 30, 1908, under the laws of New York; capital, \$500,000. To succeed to the business long conducted by W. R. Brixey, at Seymour, Connecticut, and in New York city. Incorporators: Richard D. Brixey, Seymour; Reginald W. Brixey, No. 2 Rector street, New York; and Abel Crook, Brooklyn, N. Y.

Calmon Asbestos and Rubber Works of America, August 10, 1908, under the laws of New York; capital, \$25,000. Incorporators: Edward H. Garcin, Rudolf Gaertner, and Rudolph Gruber, all of New York city. Advance particulars appeared in THE INDIA RUBBER WORLD, August 1 (page 381).

Sectional Rubber Tire Co., August 26, 1908, under the laws of Massachusetts; capital, \$50,000. A. H. Cushing, Brookline, treasurer; W. T. Simpson, South Weymouth, clerk.

Knickerbocker Tire and Repair Co., August 15, 1908, under the New York laws; capital, \$10,000. Incorporators: William J. Staunton, No. 321 Pacific avenue, Jersey City, New Jersey; John J. Walsh and Charles P. Bispham, New York city.

A. G. Spalding & Brothers, August 13, 1908, under the laws of Maine; capital, \$500,000. To deal in sporting goods. The incorporators include J. W. Spalding, Monmouth Beach, New Jersey; William T. Brown, East Orange, N. J., and Paul Walton, Ridgewood, N. J.

PERSONAL MENTION.

MR. HENRY C. PEARSON, editor of THE INDIA RUBBER WORLD and delegate from the New England Rubber Club to the International Rubber and Allied Trades Exhibition to be held this month in the Olympia, London, sailed from New York on the *Minnehaha* on August 22, and will remain abroad so long as the exhibition is in progress.

President Samuel P. Colt, of the United States Rubber Co., spent the month past at Jackson, New Hampshire. Secretary Samuel Norris, of the same company, spent his vacation in the Adirondacks. Treasurer John J. Watson, Jr., spent some of the heated term at Lake Mohonk, New York. Manager of Sales Edward R. Rice was in London recently, planning to go to the Continent.

Mr. Eben H. Paine, the resident director in London of The United States Rubber Co., has ended his summer vacation on this side of the Atlantic.

Mr. James Bishop Ford, first vice president of the United States Rubber Co., with his schooner yacht *Katrina*, took part in the annual cruise of the New York Yacht Club, starting from New London, Connecticut, on August 7.

The will of the late Charles H. Dale, president of the Rubber Goods Manufacturing Co., filed in the surrogate's court in Westchester county, New York, on August 3, bequeaths to the widow his entire estate. The value is not stated, but has been estimated at about \$2,500,000. Mrs. Dale is appointed sole executrix.

August Johnston, of New York, engaged in the india-rubber and gutta-percha machinery trade, is making a two-months' visit to Europe, particularly to Sweden, his native country, though he will look into the rubber business elsewhere on the continent.

His excellency, Wu Ting-fang, the Chinese ambassador at Washington, paid a visit recently to Butler, New Jersey, and was shown through the work of the American Hard Rubber Co.

Mr. Tracy S. Lewis, treasurer of the Beacon Falls Rubber Shoe Co. (Beacon Falls, Connecticut), arrived at home during the month from six weeks' absence in Europe.

TRADE NEWS NOTES.

THE directors of the Boston Woven Hose and Rubber Co. have declared a semi-annual dividend of \$4 per share on the common stock, payable September 15, to stockholders of record September 5.

James Gray, for several years superintendent of the Joseph Banigan Rubber Co., has accepted the position of superintendent of the factory of the Merchants Rubber Co., Limited, rubber footwear manufacturers at Berlin, Canada. Mr. Gray was connected with the Woonsocket and Banigan companies altogether for 30 years.

The Apsley Rubber Co. (Hudson, Massachusetts) have resumed work after the annual summer shutdown for inventory and repairs.

TRADE NEWS NOTES.

At the recent great mining exhibition at Olympia, London, were shown two Robbins belt conveyors in operation, handling ores and the like. In care of one of the belts the material passed over an automatic weighing machine. This was Merrick's patent conveyor weightometer, and was one of the first of its kind exhibited.

Business is reported very good at the works of the National India-Rubber Co. (Bristol, Rhode Island), particularly in the insulated wire department, where some very large orders are in hand.

Mr. John E. Dickson has resigned as representative in Chicago of the Cincinnati Rubber Manufacturing Co., to become Western manager for the Trenton Rubber Manufacturing Co., with headquarters at No. 253 LaSalle street, Chicago.

At a recent second convention of the selling force of Batchelder & Lincoln Co., extensive jobbers of leather and rubber footwear, of Boston, Mr. William H. Palmer, of the sales department of the Boston Rubber Shoe Co., gave a talk on the way in which his department is run, and gave details regarding the business relations of the two companies, mentioning that Batchelder & Lincoln Co. have been longer on the list of customers of the rubber company than any other firm, the connection having existed for more than 50 years. Mr. Walter E. Piper, superintendent of one of the factories of the Boston Rubber Shoe Co., explained the principal details of the rubber shoe manufacture, illustrating his remarks with samples of the materials used and specimens of footwear in various stages of manufacture.

The president of the Women's League of New York State, who estimated recently that about 75,000 women in the State who usually work for wages or salaries were out of employment, reports prospects favorable for the number being materially reduced during the next month or so, owing to improved business conditions. The work of the league has been confined not so much to providing positions for women as to finding where they can go to get them. A recent report of the league mentions that "The B. F. Goodrich Co. (the rubber manufacturers of Akron, Ohio) wanted to know how many women from New York were willing to go there."

In regard to the financial situation Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "General money market conditions have continued easy through August, and there has been a fairly good demand for paper, the usual run of rubber names ruling at 4 to 5 per cent. for the best and 5½ to 6 per cent. for those not so well known. The demand is likely to fall off somewhat in the course of the next month or two."



JOSEPH DIXON CRUCIBLE CO.'S FACTORY.

[From a photograph taken during the erection of an important addition to the plant at Jersey City, New Jersey. In the buildings shown is included their rubber factory, for erasers and such like goods.]

VULCOLE.

A VERY curious and unusual assistant for rubber compounds has just come into the market, under the name of Vulcole. It seems to have such an effect on sulphur in the compound that sulphur may be put in as a compounding ingredient, very much as one would put in whiting, with the probable effect that the fused sulphur, instead of lessening the elasticity as in the case of whiting, leaves it the same as if the compound were pure gum. For example, it is said that a compound consisting of 10 pounds fine Pará, 7½ pounds sulphur, 8 ounces lime, 3 pounds litharge, and 6 ounces vulcole, cured in a mold 15 minutes at 45 pounds of steam, gives a soft rubber with an elasticity of 7 to 1. Samples made six months ago are apparently as good as when they left the molds. Another point is that the goods come out of the molds without the necessity of soaping, the impression being wonderfully clear.

Vulcole, added to a non-blooming compound, reduces the time of cure at least two-thirds, so it is said, which would seem paradoxical in the face of the statement that 75 per cent. of sulphur with Vulcole added makes a soft compound in a 15 minutes cure. The new product is manufactured by the American Vulcole Co., of which Mr. W. C. Coleman, of Boston, is sales agent.

SOME WANTS OF THE RUBBER TRADE.

[459] "CAN you tell us who manufactures a rubber guard to fit on the paddles for canoes, to prevent the water from running back on the hand?"

[460] "Can you advise us of a concern manufacturing erasing rubbers in the United States?"

[461] "Kindly furnish us with the names of manufacturers of rubber tools; such as scratchers, hand rollers, etc."

[462] "Kindly furnish us with a list of the different manufacturers who would be apt to use the following scrap: Hard rubber, solid; hard rubber shavings; soft rubber scrap, cured and uncured; cloth inserted scrap, cured and uncured."

LOWER COTTON YIELD IN EGYPT.

THE production of cotton in Egypt appears not to have kept pace with the area planted, according to a report of the Egyptian Cotton Commission, printed in the *Alexandria Gazette*. While the actual reported production increase from an average of 583,703,515 pounds for the three years 1896-1898 to an average of 634,660,951 pounds in the years 1905-1907, the yearly annual yield per acre has declined about 24 per cent.—from 538 to 410 pounds. This is said to be due to too constant cropping with cotton, the deterioration of the plant, the increase of the insect pests, and the lack of fertilizers. The cotton commission hope to remedy these ills.

RUBBER shoes imported into Chile are valued arbitrarily at the custom house at \$1.46 (gold) per kilogram [=66 2/3 cents per pound], and the duty assessed is 25 per cent. *ad valorem*. The reduction in duties on most kinds of footwear which went into effect under the presidential decree of March 21, 1908, does not apply to rubber boots and shoes.

THE London *Financial News* hears from Paris: "Advices from the French Congo state that a crisis has arisen in the india-rubber trade there. Exports are diminishing considerably, in consequence of higher prices, and fears are expressed by the authorities of the colony that financial uneasiness may follow."

THE working expenses of the Electromobile Cab Co., of Berlin, were substantially reduced during 1907, the diminution in the maintenance of tires having alone been 27 per cent.

INDIA-RUBBER MISCELLANY.

AN EAST INDIAN RUBBER SYNDICATE.

THERE has been organized, with headquarters at Batavia, Algemeen Nederlandsch-Indisch Rubber Syndicaat (General Dutch Indies Rubber Syndicate), for the purpose of offering its services for the management and administration of enterprises for the cultivation of rubber, for drawing up estimates and accounts, and for making reports. The names of those responsible for the control of the syndicate are not stated, but it would seem to be a credible concern from the prominence with which it appears in the representation of Dutch colonial interests at the London Rubber Exhibition.

PROGRESS IN BRITISH NORTH BORNEO.

At the fifty-first half yearly meeting of the British North Borneo Co. (London, July 28) the chairman referred to rubber culture in optimistic terms. The company hold shares in two of the five rubber companies which are operating within their territory, and indicated an intention to aid in the formation of more such companies. He said: "We decided, a few months ago, to commence rubber planting on our own account on the railway. After a certain amount of development it is our intention to sell our estate to a company as a going concern. Then we shall again, in a similar manner, pave the way for another company, and from time to time continue the process, as there is practically no limit to the land in our territory which is suitable for the cultivation of rubber." The income of the British North Borneo Co. was larger in 1907 (£145,816 4s. 6d.) than in any former year, and the dividend rate advanced from 3 to 4 per cent. An account of the rubber planting companies on their territories was given in THE INDIA RUBBER WORLD, September 1, 1907 (page 369).

A MUSEUM RUBBER GUIDE.

THE authorities of the Koloniaal Museum at Haarlem, Netherlands, maintain a series of descriptive catalogues or handbooks of the principal economic products contained in the museum, which are exceptionally thorough and well prepared. A second edition of the catalogue on "Caoutchouc Getah-Pertja en Balata" has been brought out, having on the title page the name of A. Slingervoet Ramondt, a chemist connected with the technical high school at Delft, whose "Geschichte der Kautschukforschung" was reviewed recently in these pages. Herr Ramondt, by the way, is a member of the Netherlands committee for the London Rubber Exhibition this month. The museum handbook referred to embraces a historical summary of the materials described, their botanical sources, chemical analyses, and the technical processes employed in utilizing the materials. [12mo. pp. 71. 24 cents.]

LIGHTING A RUBBER CAPITAL.

THE latest yearly report of the Pará Electric Railway and Lighting Co., Limited, attributes the company's failure to do better during the year to the financial crisis growing out of the rubber situation. "The product was very largely sold in the United States," says the report, "and the recent panic there paralyzed the trade." Better things are hoped for, however, now that horses and mules have been wholly retired from the Pará tramways, and the whole 35 miles (single line) are operated electrically, with an equipment of 68 motor cars. Besides, the company have a promising business in the supplying of electric light and power.

A PLEA FOR RUBBER STOPPERS.

SOMEBODY writes to the *Pharmaceutical Era* urging the formation of a Rubber Stopper League, "to be composed of retail druggists who will bind themselves to buy their syrups, extracts, exilirs and any other thing suitable, of the makers who use rubber stoppers, rather than from those benighted ones who will still use corks. I hope also that you will point out, in season and out of season, the value of the rubber stopper as a means of grace. Probably every man in the trade has lost his temper many, many times when, busy and alone, or short-handed, two or three corks of stock bottles have broken short off."

DEATH OF PRESIDENT COLT'S BROTHER.

GEORGE DEWOLF COLT died at his home in New York on July 25, after having been in declining health for two years. He was born in Hartford, Connecticut, September 18, 1838, being the eldest son of Christopher and Theodora G. (DeWolf) Colt. In early life he engaged in business in New Orleans, from which he retired in time, and during the last 25 years he had resided in New York. He is survived by two brothers, Colonel Samuel Pomeroy Colt, president of the United States Rubber Co., and Judge Le Baron B. Colt, of the United States circuit court of the first circuit, and a sister, Mrs. Francesca E. DeWolf, who is now in Switzerland. The interment was at Bristol, Rhode Island, in the family lot at Juniper Hill cemetery, after funeral services at the residence of Colonel Samuel P. Colt.

UNITED STATES RUBBER CO.'S SHARES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending August 22:

COMMON STOCK.

Week August 1	Sales 7,600 shares	High 31¾	Low 27½
Week August 8	Sales 17,235 shares	High 37½	Low 31½
Week August 15	Sales 6,175 shares	High 37½	Low 32¾
Week August 22	Sales 1,400 shares	High 34	Low 32¾
For the year—High, 37½, Aug. 7; Low, 17½, Feb. 26.			
Last year—High, 52½; Low, 13½.			

FIRST PREFERRED STOCK.

Week August 1	Sales 1,800 shares	High 98	Low 96¼
Week August 8	Sales 4,378 shares	High 102¾	Low 98¾
Week August 15	Sales 3,600 shares	High 102¾	Low 99¼
Week August 22	Sales 800 shares	High 101	Low 99½
For the year—High, 102¾, Aug. 7; Low, 76, Feb. 19.			
Last year—High, 109¾; Low, 61¼.			

SECOND PREFERRED STOCK.

Week August 1	Sales 100 shares	High 64	Low 64
Week August 8	Sales 1,000 shares	High 74	Low 70
Week August 15	Sales shares	High ..	Low ..
Week August 22	Sales 100 shares	High 72	Low 72
For the year—High, 74, Aug. 7; Low, 42, Feb. 21.			
Last year—High, 78½; Low, 39.			

In addition to his work as consulting and contracting engineer to the rubber trade, Mr. M. P. Fillingham (No. 2 Rector street, New York) has taken on the manufacture of vulcanizing machinery in general. His long connection with some of the largest manufacturers of such machinery, and with the rubber business, has rendered him well informed as to the requirements of the trade. Mr. Fillingham has availed himself of the advantages afforded by the large shops of the Traylor Engineering Co. (Allentown, Pennsylvania), which are admirably fitted for the prompt filling of orders for machinery.

Review of the Crude Rubber Market.

THE feature of interest in the market developed since our last report, is the return of "dollar rubber." Prices of most grades are higher than a month ago, indicating an improving demand for rubber, and likewise that supplies of some grades are being cleaned out. Imports at New

York have been large of late, of the principal classes of rubber, thus offsetting the reduced arrivals of a few months past. The mills are moderately busy, but trade in general is quiet, though not to the extent of causing apprehension. The Antwerp sale on August 26 created little interest in America.

Arrivals at the mouth of the Amazon to date are less than for the same period of the last crop season. The arrivals from the various other principal sources also were smaller, though this deficit is being made good by the increased output of plantation Pará grades from the Far East.

Following are the quotations of New York for Pará grades one year ago, one month ago, and August 29—the current date:

PARA.	Sept. 1, '07.	Aug. 1, '08.	Aug. 29.
Islands, fine new.....	105@106	83@ 84	89@ 90
Islands, fine old.....	none here	96@	none here
Upriver, fine, new.....	110@111	92@ 92	95@ 96
Upriver, fine, old.....	113@114	94@ 95	98@ 100
Island, coarse, new.....	59@ 60	42@ 43	43@ 44
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	89@ 90	64@ 65	68@ 69
Upriver, coarse, old.....	none here	65@ 66	69@ 70
Caucho (Peruvian), sheet	70@ 71	49@ 50	50@ 51
Caucho (Peruvian), ball	88@ 89	60@ 61	61@ 62
Ceylon (plantation), fine sheet	133@134	104@105	103@104

AFRICAN.

Sierra Leone, 1st quality.....	78 @80	Lopori ball, prime....	80@81
Massai, red.....	78 @80	Lopori strip, prime....	62@63
Benguella.....	43½@44	Madagascar, pinky....	64@65
Accra flake.....	15 @16	Ikelemba.....	none here
Cameroon ball.....	48 @49	Soudan niggers.....	54@55

CENTRALS.

Esmerelda, sausage....	60@61	Mexican, scrap.....	50@60
Guayaquil, strip.....	44@45	Mexican, slab.....	40@41
Nicaragua, scrap.....	59@60	Mangabeira, sheet.....	43@44
Panama.....	44@45	Guayule.....	25@26

EAST INDIAN.

Assam.....	72@73	Borneo.....	26@27
Late Pará cables quote:			
Per Kilo.		Per Kilo.	
Islands, fine.....	4\$100	Upriver, fine.....	5\$150
Islands, coarse.....	1\$800	Upriver, coarse.....	3\$200
Latest Manãos advices:		Exchange.....	
Upriver, fine.....	5\$250	Exchange.....	15 3/16d.
Upriver, coarse.....	3\$250		

NEW YORK RUBBER PRICES FOR JULY (NEW RUBBER).

	1908.	1907.	1906.
Upriver, fine.....	.91@.96	1.08@1.15	1.22@1.24
Upriver, coarse.....	.64@.67	.86@.90	.89@.91
Islands, fine.....	.83@.88	1.04@1.08	1.18@1.20
Islands, coarse.....	.42@.46	.61@.64	.64@.65
Cametá.....	.52@.55	.70@.71	.69@.71

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.				
	Fine and Medium.	Coarse.	Total 1908.	Total 1907.
Stocks, June 30.....	260	87 =	347	303
Arrivals, July.....	903	447 =	1350	695
Aggregating.....	1163	534 =	1697	998
Deliveries, July.....	965	446 =	1411	708
Stocks, July 31.....	198	88 =	286	290
PARA.				
	1908.	1907.	1906.	1905.
Stocks, June 30.....	373	170	30	1235
Arrivals, July.....	1080	1090	1300	376
Aggregating.....	1453	1260	1330	1611
Deliveries, July.....	1203	1095	954	1411
Stocks, July 31.....	250	165	376	200
ENGLAND.				
	1908.	1907.	1906.	1905.
World's visible supply, July 31.....	1,922	1,659	1,841	1,300
Pará receipts, July 1 to July 31.....	1,080	1,090	1,300	
Pará receipts of Caucho, same dates.....	240	230	350	
Afloat from Pará to United States, July 31.....	270	109	193	
Afloat from Pará to Europe, July 31.....	355	420	335	

United States Crude Rubber Imports.

[FISCAL YEARS ENDED JUNE 30.]

	1906.	1907.	1908.
United Kingdom.....	8,918,288	9,893,471	6,809,622
Germany.....	3,469,084	4,730,257	2,821,194
Other Europe.....	8,910,897	9,381,326	6,883,473
Central American States and British Honduras.....	1,282,647	1,194,249	992,198
Mexico.....	1,705,915	7,175,097	9,209,443
Brazil.....	29,497,148	40,286,751	32,645,173
Other South America.....	1,816,742	2,036,962	1,537,887
East Indies.....	2,095,981	2,234,654	1,237,487
Other Countries.....	147,643	31,071	36,683

Total.....	\$7,884,345	\$7,963,838	\$6,233,160
Value.....	\$45,114,450	\$58,919,981	\$36,613,185
Average per pound.....	77.9 cents.	76.5 cents.	58.8 cents.

EXPORTS: same period.....	3,829,533	4,215,350	4,110,397
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Excess of imports.....	54,054,812	72,748,488	58,122,763
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Antwerp.

ANTWERP RUBBER STATISTICS FOR JULY.

DETAILS.	1908.	1907.	1906.	1905.	1904.
Stocks, June 30.....	684,866	671,793	618,834	582,986	689,515
Arrivals, in July.....	227,202	613,064	328,790	449,085	639,157
Congo sorts.....	172,828	559,144	247,197	324,993	539,159
Other sorts.....	54,374	53,920	81,602	124,122	108,998
Aggregating.....	912,068	1,284,857	947,633	1,032,071	1,328,672
Sales in July.....	216,517	353,501	416,192	212,512	455,926
Stocks, July 31.....	695,551	931,356	531,441	819,559	872,746
Arrivals since Jan. 1.....	2,833,027	3,191,798	3,355,695	3,210,284	3,464,917
Congo sorts.....	2,430,364	2,753,722	2,560,838	2,536,030	2,847,591
Other sorts.....	402,663	438,076	794,857	674,254	617,326
Sales since Jan. 1.....	3,144,370	2,918,626	3,559,351	2,932,086	3,203,071

RUBBER ARRIVALS FROM THE CONGO.

AUGUST 4.—By the steamer *Bruxellesville*:

Bunge & Co.....	(Société Générale Africaine) kilos	61,300	
Do		86,200	
Do	(Comptoir Commercial Congolais)	30,800	
Do	(Société Abir)	8,100	
Do	(Anvers ice)	9,300	
Do	(Chemins de fer Grands Lacs)	4,000	
Do	(Comité Spécial Katanga)	4,000	
Do	(Cie du Kasai)	66,500	
Société Coloniale Anversoise.....	(Belge du Haut Congo)	6,000	
Do	(Cie. du Lomami)	2,800	
Do	(Société Ikelemba)	3,100	
Do		6,700	
Société Générale de Commerce.....	(Lohay)	21,000	
L. & W. Van de Velde.....		2,500	312,300

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

AUGUST 6.—By the steamer <i>Cearense</i> , from Manãos and Pará:				
IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.
General Rubber Co.....	88,500	12,100	89,200	2,200 =
New York Commercial Co.....	29,900	24,500	29,100	57,100 =
A. T. Morse & Co.....	52,500	7,200	21,500	81,200 =
Poel & Arnold.....	33,200	7,000	25,000	65,200 =
C. P. dos Santos.....	30,700	3,200	24,400	58,300 =
Hagemeyer & Brunn.....	20,000		25,800	45,800 =
Edmund Reeks & Co.....	12,900	1,400	15,200	29,500 =
Lawrence Johnson & Co.....	13,900		2,400	16,300 =
Total.....	281,600	55,400	232,600	59,300 =

AUGUST 24.—by the steamer <i>Cuthbert</i> , from Manãos and Pará:				
General Rubber Co.....	96,600	18,800	77,900	900 =
A. T. Morse & Co.....	77,600	16,800	64,400	3,700 =
Poel & Arnold.....	28,600	17,600	75,800	122,000 =
C. P. Santos.....	23,600	8,600	44,800	79,400 =
New York Commercial Co.....	14,300	5,400	35,300	55,000 =
William E. Peck & Co.....	8,900		40,300	49,200 =
Edmund Reeks & Co.....	3,200	1,100	33,600	39,900 =
Hagemeyer & Brunn.....	8,900		16,500	25,400 =
Total.....	261,700	68,300	388,600	7,000 =

NOTE.—The *Maranhense*, from Manãos and Pará, is due at New York on September 7, with 440 tons of rubber and 30 tons of caucho.

PARA RUBBER VIA EUROPE.

POUNDS.	
JULY 25.—By the <i>Lucania</i> —Liverpool:	
New York Commercial Co (Fine).....	27,000
JULY 27.—By the <i>Touraine</i> —Havre:	
Poel & Arnold (Fine).....	20,000

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

WRITE FOR PRICES.

Massachusetts Chemical Co., Walpole, Mass.

See FACTORY-WALPOLE RUBBER WORKS.
WALPOLE VARNISH WORKS.
ELECTRIC INSULATION LABORATORY

WE ARE OFFERING SCRAP RUBBER AT LOW PRICES



Theodore Hofeller & Company
BUFFALO, N. Y.

WE SOLICIT YOUR INQUIRIES



VULCOLE

A chemical that will actually reduce the cost of a compound 33 1/3% and not reduce its quality. Enables rubber to absorb 75% of its weight of sulphur and still vulcanize soft.

AMERICAN VULCOLE CO.

MANUFACTURING CHEMISTS. Write For Samples. 161 SUMNER ST., BOSTON, MASS.

HYDRO-CARBON

That's acknowledged Best—because it Tests 99+ % Purity. Amalgamates perfectly in vulcanizing process. Retains its flexibility at zero weather. Write for Free Samples.
AMERICAN WAX CO. Boston, Mass.

July 30.—By the <i>Patricia</i> —Hamburg:		
Poel & Arnold (Fine).....	22,500	
New York Commercial Co. (Fine).....	2,500	25,000
July 30.—By the <i>Etruria</i> —Liverpool:		
New York Commercial Co. (Fine).....	50,000	
Poel & Arnold (Coarse).....	20,000	70,000
July 31.—By the <i>Lusitania</i> —Liverpool:		
New York Commercial Co. (Fine).....	45,000	
General Rubber Co. (Fine).....	13,500	58,500
August 6.—By the <i>Umbria</i> —Liverpool:		
Poel & Arnold (Fine).....	75,000	
C. P. Santos (Coarse).....	2,500	77,500
August 6.—By the <i>Esperanza</i> —Mollendo:		
W. R. Grace & Co. (Cauchó).....	20,000	
August 7.—By the <i>Pretoria</i> —Hamburg:		
New York Commercial Co. (Fine).....	5,000	
August 7.—By the <i>Mauretania</i> —Liverpool:		
A. T. Morse & Co. (Fine).....	22,500	
A. T. Morse & Co. (Coarse).....	7,000	29,500
August 11.—By the <i>Colon</i> —Mollendo:		
W. R. Grace & Co. (Cauchó).....	27,000	
August 13.—By the <i>Luconia</i> —Liverpool:		
A. T. Morse & Co. (Fine).....	11,500	

August 17.—By the <i>Zeeland</i> —Antwerp:		
W. L. Gough & Co. (Fine).....	3,500	
August 19.—By the <i>Lincoln</i> —Hamburg:		
New York Commercial Co. (Fine).....	7,000	
W. L. Gough & Co. (Fine).....	11,500	18,500
August 19.—By the <i>Campania</i> —Liverpool:		
Poel & Arnold (Fine).....	11,500	
August 21.—By the <i>Lusitania</i> —Liverpool:		
General Rubber Co. (Fine).....	135,000	

OTHER NEW YORK ARRIVALS.

CENTRALS.

July 24.—By the <i>Mexico</i> —Frontera:		
E. Steiger & Co.	5,000	
Harburger & Stack.	5,000	
General Export Co.	2,500	
H. Marquardt & Co.	3,500	
Graham, Hinkley & Co.	1,000	17,000
July 27.—By the <i>El Valle</i> —Galveston:		
New York Commercial Co.	84,000	
July 28.—By the <i>Allianca</i> —Colon:		
Hirzel, Feltmann & Co.	7,000	
Isaac Brandon & Bros.	6,000	

Henry Mann & Co.	1,000	
Piza Nephews Co.	1,000	
G. Amsinck & Co.	1,000	16,000
July 28.—By the <i>Cienfuegos</i> —Tampico:		
Edward Maurer	80,000	
New York Commercial Co.	55,000	
Poel & Arnold	22,500	
H. Marquardt & Co.	3,500	161,000
July 29.—By the <i>Spartan Prince</i> —Bahia:		
Poel & Arnold	45,000	
J. H. Rossback & Bros.	31,000	
New York Commercial Co.	23,000	
A. Hirsch & Co.	22,500	
A. D. Hitch & Co.	7,000	128,500
July 29.—By the <i>Joachim</i> —Colon:		
Meeker & Co.	5,000	
Hirzel, Feltmann & Co.	3,500	
D. A. De Lima & Co.	3,000	
Kunhardt & Co.	3,000	
Wessels-Kulenkamp Co.	2,000	
G. Amsinck & Co.	1,000	
Aramburo Co.	1,000	18,500
August 1.—By the <i>Seguranca</i> —Frontera:		
Harburger & Stack.	7,000	
E. U. Tibbals & Co.	1,500	
American Trading Co.	1,000	

GUAYULE

WHEN PROPERLY CURED AND MIXED WITH OTHER COMPOUNDS
IS THE CHEAPEST RUBBER ON THE MARKET

**There is As Much Difference Between the Various Brands of Guayule
as Between Fine Para and Shoddy**

Guayule made from old, sun exposed shrub is **dead, dirty and sticky**, and no amount of washing will make it clean, while rubber made from freshly cut, selected shrub, has **life, low percentage of resin and is practically clean.**



has been on the market for several years and is known to be the best Guayule made as to life, strength, purity and low percentage of resin.

There is a large demand for a specially prepared Guayule, dry and ready for use, which we have met in



As this rubber is made exclusively from our high grade "Parra" Guayule, uniformity and absolute purity is guaranteed. No mixing in of cheap compounds to bring down the price. Durango rubber is nothing but Parra brand pure Guayule prepared so that anybody can use it.

**CONTRACTS MADE FOR REGULAR MONTHLY
OR WEEKLY DELIVERIES**

For Samples and Quotations apply to

ED. MAURER

97 Water St., NEW YORK

**Sole Representative of the MADERO interests in Mexico,
largest owners of Guayule**

General Export Co.	1,000	
H. Marquardt & Co.	1,000	11,500
August 3.—By <i>El Norte</i> = Galveston:		
Edward Maurer		*22,500
August 3.—By the <i>Financé</i> = Colon:		
Piza Nepheus Co.	1,500	
Eggers & Heinlein	1,500	
G. Amsinck & Co.	1,000	
Dumarest Bros.	1,000	
K. Mandell & Co.	1,000	6,000
August 5.—By the <i>Velasquez</i> = Bahia:		
Poel & Arnold	45,000	
New York Commercial Co.	22,500	
J. H. Rosshack & Bros.	15,000	
A. Hirsch & Co.	10,000	93,500
August 6.—By the <i>Esperanza</i> = Colon:		
Isaac Brandon & Bros.	1,000	
American Trading Co.	1,000	
Jose Julia & Co.	1,000	
In Transit	2,000	5,000
August 8.—By the <i>Buyamo</i> = Tampico:		
Edward Maurer	*95,000	
Isaac Kubie & Co.	5,000	
H. Marquardt & Co.	3,500	
American Trading Co.	2,000	
Akron, Ohio	*4,500	*115,000
August 11.—By the <i>Colon</i> = Colon:		
Hirzel, Feltmann & Co.	5,000	
A. Santos & Co.	3,000	
G. Amsinck & Co.	2,500	
Isaac Brandon & Bros.	1,000	11,500
August 14.—By the <i>Carib II</i> = Ceiba:		
Eggers & Heinlein	2,500	
H. W. Peabody & Co.	1,000	3,500
August 14.—By the <i>Sigismund</i> = Colombia:		
Kunhardt & Co.	3,500	
A. Held	1,000	
L. Brandon & Bros.	1,000	
Mecke & Co.	1,000	
Stanley, Jordan & Co.	1,000	7,500
August 14.—By the <i>Morro Castle</i> = Frontera:		
Kramer & Forster	5,500	
E. Steiger & Co.	3,500	
Harburger & Stack	2,000	
General Export Co.	1,000	
Graham, Hinkley & Co.	1,000	
H. Marquardt & Co.	1,000	15,500
August 17.—By the <i>Advance</i> = Colon:		
G. Amsinck & Co.	2,500	
A. Rosenthal's Sons	1,000	
Arambuco Co.	1,000	4,500
August 19.—By the <i>Siberia</i> = Greytown:		
Suzarte & Whitney	4,000	
G. Amsinck & Co.	1,500	
Jose Julia & Co.	1,000	6,500
August 20.—By the <i>Tijomo</i> = Tampico:		
Edward Maurer		*55,000
August 20.—By <i>El Norte</i> = New Orleans:		
Eggers & Heinlein		2,500
August 21.—By the <i>Corsican</i> = Bahia:		
Poel & Arnold	45,000	
J. H. Rosshack Bros.	38,000	83,000
August 21.—By the <i>Alianza</i> = Colon:		
G. Amsinck & Co.	8,500	
Hirzel, Feltmann & Co.	8,000	
L. Johnes & Co.	4,500	
L. Brandon & Bros.	4,000	
Roldau & Van Sickle	2,500	
A. M. Capens' Sons	2,000	
Elmenhorst & Co.	1,000	30,500
August 22.—By the <i>Mexico</i> = Frontera:		
E. Steiger & Co.	7,500	
Harburger & Stack	2,000	
American Trading Co.	1,500	
General Export Co.	1,000	
Pablo Calvet Co.	1,000	13,000
August 22.—By the <i>Manzanillo</i> = Tampico:		
Edward Maurer	*95,000	
New York Commercial Co.	56,000	
Poel & Arnold	34,000	
Remsche & Heile	*44,500	*229,500

*This sign, in connection with imports of Centrals, denotes Guayule rubber.

*This sign, in connection with imports of Centrals, denotes Guayule rubber.

AFRICANS.

	POUNDS.
JULY 23.—By the <i>Bordeaux</i> =Havre:	
A. T. Morse & Co.	9,000
JULY 25.—By the <i>Celtic</i> =Liverpool:	
General Rubber Co.	112,000
Poel & Arnold.	50,000
JULY 25.—By the <i>Lucania</i> =Liverpool:	
General Rubber Co.	22,500
JULY 27.—By the <i>Touraine</i> =Havre:	
Poel & Arnold.	13,500
JULY 28.—By the <i>Kroonland</i> =Antwerp:	
A. T. Morse & Co.	50,000
Rubber Trading Co.	13,500
Poel & Arnold.	12,000
Joseph Cantor.	4,500
JULY 30.—By the <i>Patricia</i> =Hamburg:	
A. T. Morse & Co.	7,000
George A. Alden & Co.	6,500
Poel & Arnold.	2,500
JULY 30.—By the <i>Etruria</i> =Liverpool:	
General Rubber Co.	18,000
AUGUST 1.—By the <i>Baltic</i> =Liverpool:	
George A. Alden & Co.	22,500
Livesey & Co.	3,500
AUGUST 4.—By the <i>Vaderland</i> =Antwerp:	
George A. Alden & Co.	37,000
A. T. Morse & Co.	13,500
Robinson & Co.	9,000
Rubber Trading Co.	7,500
AUGUST 6.—By the <i>Umbria</i> =Liverpool:	
General Rubber Co.	65,000
Poel & Arnold.	15,000
AUGUST 7.—By the <i>Pretoria</i> =Hamburg:	
George A. Alden & Co.	13,500
AUGUST 7.—By the <i>Cedric</i> =Liverpool:	
General Rubber Co.	112,000
AUGUST 10.—By the <i>Bluecher</i> =Hamburg:	
General Rubber Co.	28,500
AUGUST 10.—By the <i>Finland</i> =Antwerp:	
Joseph Cantor.	5,500
W. L. Gough & Co.	1,500
AUGUST 13.—By the <i>Waldersee</i> =Hamburg:	
A. T. Morse & Co.	11,500
Poel & Arnold.	2,000
AUGUST 15.—By the <i>Lucania</i> =Liverpool:	
A. T. Morse & Co.	13,500
General Rubber Co.	3,500
Livesey & Co.	1,000
AUGUST 19.—By the <i>Lincoln</i> =Hamburg:	
A. T. Morse & Co.	24,500
George A. Alden & Co.	4,500
AUGUST 19.—By the <i>Campania</i> =Liverpool:	
Poel & Arnold.	15,000
A. T. Morse & Co.	5,000
General Rubber Co.	4,500
EAST INDIAN.	
	POUNDS.
JULY 27.—By the <i>Philadelphia</i> =London:	
A. T. Morse & Co.	*6,500
JULY 27.—By the <i>Minneapolis</i> =London:	
New York Commercial Co.	*11,500
H. A. Gould Co.	3,500
JULY 31.—By the <i>Indrawadi</i> =Singapore:	
George A. Alden & Co.	20,000
AUGUST 3.—By the <i>Minnetonka</i> =London:	
Otto Isenstein & Co.	11,500
Joseph Cantor.	4,500
C. Von Postel.	2,000
AUGUST 8.—By the <i>New York</i> =London:	
A. T. Morse & Co.	*6,500
AUGUST 10.—By the <i>Matappo</i> =Colombo:	
A. T. Morse & Co.	*5,500
AUGUST 11.—By the <i>Mesaba</i> =London:	
L. C. Hopkins Co.	17,500
General Rubber Co.	*10,000
Robinson & Co.	2,500
George A. Alden & Co.	2,000
AUGUST 21.—By the <i>Ghazee</i> =Singapore:	
Otto Isenstein & Co.	20,000
George A. Alden & Co.	7,500

EAST INDIAN.

JULY 27.—By the <i>Philadelphia</i> =London:	
A. T. Morse & Co.....	\$6,500
JULY 27.—By the <i>Minneapolis</i> =London:	
New York Commercial Co.....	11,500
H. A. Gould.....	3,500
JULY 31.—By the <i>Andromeda</i> =Singapore:	
George A. Alden & Co.....	20,000
AUGUST 3.—By the <i>Minnetonka</i> =London:	
Otto Isenstein & Co.....	11,500
Joseph Cantor.....	4,500
C. Von Postau Co.....	2,000
AUGUST 8.—By the <i>New York</i> =London:	
A. T. Morse & Co.....	\$6,500
AUGUST 10.—By the <i>Matappo</i> =Colombo:	
A. T. Morse & Co.....	\$5,500
AUGUST 11.—By the <i>Mesaba</i> =London:	
L. C. Hopkins Co.....	17,500
General Rubber Co.....	10,000
Robinson & Co.....	2,500
George A. Alden & Co.....	2,000
AUGUST 21.—By the <i>Ghazee</i> =Singapore:	
Otto Isenstein & Co.....	20,000
George A. Alden & Co.....	7,500

W. L. Gough Co.....	7,500	
Adamson & Co.....	3,000	38,000
August 22.—By the Philadelphia=London:		
A. T. Morse & Co.....		*11,500
August 24.—By the Minneapolis=London:		
A. T. Morse & Co.....		*11,500
Robinson & Co.....	11,000	
Rubber Trading Co.....	5,500	28,000

*Denotes plantation rubber.

GUTTA-JELUTONG.

	POUNDS.
JULY 25.—By the <i>Lucania</i> =Liverpool:	
Heabler & Co.	55,000
JULY 31.—By the <i>Indrawadi</i> =Singapore:	
Robinson & Co.	175,000
Heabler & Co.	220,000
N. Joachimson	130,000
George A. Alden & Co.	110,000
Winter & Smillie.	55,000
W. L. Gough Co.	30,000
	720,000
AUGUST 7.—By the <i>Cedric</i> =Liverpool:	
Heabler & Co.	45,000
AUGUST 11.—By the <i>Mesaba</i> =London:	
Heabler & Co.	30,000
AUGUST 21.—By the <i>Grazeo</i> =Singapore:	
Heabler & Co.	175,000
N. Joachimson	125,000
Robinson & Co.	55,000
W. L. Gough Co.	55,000
	410,000

GUTTA-PERCHA.

		POUNDS.
AUGUST 10.—By the <i>Lincoln</i> =Hamburg:		
Robert Soltau Co.		8,000
BALATA.		
JULY 25.—By the <i>Prins Willem</i> =Curapano:		
G. Amsinck & Co.	2,000	
Frame & Co.	1,500	3,500
AUGUST 3.—By the <i>Maraval</i> =Trinidad:		
Frame & Co.		2,500
AUGUST 5.—By the <i>Korona</i> =Demerara:		
George A. Alden & Co.		3,500
AUGUST 10.—By the <i>Amsterdam</i> =Rotterdam:		
W. L. Gough Co.		2,500
AUGUST 11.—By the <i>Suriname</i> =Demerara:		
Middleton & Co.	9,000	
Frame & Co.	6,500	15,500
AUGUST 17.—By the <i>Uller</i> =Demerara:		
George A. Alden & Co.		10,000
AUGUST 18.—By the <i>Parima</i> =Demerara:		
George A. Alden & Co.	15,000	
Middleton & Co.	5,500	20,500
AUGUST 24.—By the <i>Capename</i> =Demerara:		
Sanford Parks & Co.		11,500
AUGUST 25.—By the <i>Statendam</i> =Rotterdam:		
Earl Brothers		5,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—JULY.		
<i>Imports:</i>		
India-rubber	5,305,780	\$3,224,101
Balata	127,995	54,254
Gutta-percha	1,400	2,350
Gutta-jelutong (Pontianak)	1,389,918	30,385
Total	6,825,093	\$3,310,790
<i>Exports:</i>		
India-rubber	82,036	\$2,050
Reclaimed rubber	49,442	5,951
Rubber scrap imported...	501,042	\$34,841

BOSTON ARRIVALS.

	POUNDS.
JULY 23.—By the <i>Badenia</i> =Hamburg:	
W. L. Gough Co., Africans.....	8,300
JULY 29.—By the <i>Satsenna</i> =Singapore:	
In transit, Jelutong.....	474,000
Total	482,300

PARA EXPORTS OF INDIA-RUBBER. JULY, 1908 (IN KILOGRAMS).

NEW YORK.					EUROPE.						
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Schrader, Gruner & Co.....	40,243	10,336	143,171	.....	93,750	38,420	3,400	1,555	1,57	44,946	138,696
Gordon & Co.....	50,330	.....	128,754	.....	195,304	9,350	870	1,080	.....	12,300	207,594
Adelbert H. Alden.....	46,820	16,618	38,781	70,146	172,367	14,357	2,086	9,673	2,344	28,460	200,827
E. Pinto Alves & Co.....	6,640	.....	17,490	.....	23,950	31,790	.....	48,180	.....	79,970	103,920
R. Suarez & Co.....	.....	.....	.....	.....	.....	58,580	.....	6,172	33,757	98,509	98,509
J. Marquez & Co.....	21,760	2,720	21,780	.....	46,260	14,280	1,530	5,940	.....	21,750	68,010
De Lagtellerie & Co.....	30,600	6,970	29,370	.....	66,940	.....	.....	990	.....	990	67,930
R. O. Ahlers & Co.....	6,630	.....	1,210	.....	7,849	21,665	.....	3,978	20,962	55,605	63,454
Pires Teixeira & Co.....	6,800	.....	7,590	.....	14,390	13,430	.....	15,180	.....	28,610	43,000
Scholz, Hartle & Co.....	.....	.....	13,530	935	14,465	6,873	1,217	232	330	8,652	23,117
Singelhurst, Brocklehurst & Co.	.....	.....	.....	.....	.....	312	.....	.....	.....	312	312
Sundries.....	.....	.....	.....	.....	.....	3,800	.....	3,000	.....	3,300	3,300
Itacatiara direct.....	.....	.....	.....	.....	.....	1,223	.....	586	197	2,006	2,006
Manaos direct.....	84,813	33,931	42,276	38,358	199,378	127,365	24,063	12,145	78,862	242,435	441,813
Total, July.....	303,465	77,885	343,954	109,439	834,743	337,645	33,166	107,931	149,003	627,745	1,462,488



Vol. 38.

SEPTEMBER 1, 1908.

No. 6.

TABLE OF CONTENTS

Editorial:	
This Month at Olympia.....	391
Railways in Africa and Rubber.....	391
A Help to Business.....	392
The Modernization of Russia.....	393
Minor Editorial.....	393
The Amazon Rubber Movement.....	394
India-Rubber Goods in Commerce.....	394
The Guayule Rubber Situation.....	395
[With 3 Illustrations.]	
The India-Rubber Trade in Great Britain.....	397
[Rubber and the Turpentine Industry. New Rubber Buffer. A Patent Water Meter. Rubber in Tobago. British Guiana Rubber. Motor Tractors in War Service.]	
London Rubber Exhibition.....	398
Atlantic Cable Jubilee.....	398
India-Rubber Interests in Europe.....	399
[With an Illustration.]	
The Largest Solution Plant.....	400
[With Portrait of Thomas W. Miller.]	
Alum for Coagulating "Castilloa" Latex.....	401
[Followed by Notes on Progress in Rubber Culture Generally.]	
[With an Illustration.]	
Planting Castilloa in Colombia.....	402
[With 2 Illustrations.]	
An Alleged Fraud in Rubber.....	403
Rubber in the Congo Free State.....	404
[With 2 Illustrations.]	
Recent Patents Relating to Rubber.....	405
[United States, Great Britain, France.]	
Miscellaneous:	
Views on Plantation Rubber.....	393
A Rubber Reinforcer.....	393
Mexican Guayule Patents.....	396
"Rubber Heels and Religion".....	400
"Tabbyite" is the Latest.....	404
Rubber Trade Paralysis in Ashanti.....	406
The Late William M. Habirshaw.....	407
[With Portrait.]	
The Analysis of India-Rubber.....	408
[Erwin Meyer, Ph.D.]	
New Rubber Goods in the Market.....	409
[With 11 Illustrations.]	
The Growing Field for Rubber Tires.....	411
[The Taxicab and Automobile Trades. Tire Company Notes. With 5 Illustrations.]	
News of the American Rubber Trade.....	415
The Trade at San Francisco.....	Our Correspondent 413
The Trade at Akron.....	Our Correspondent 413
Review of the Crude Rubber Market.....	419

Liverpool.

WILLIAM WRIGHT & Co. report [August 1]:

Fine Para.—The market has been active during the month, and prices after advancing for the first half have gradually declined, and close practically the same as last month; American demand was no doubt responsible for the advance, but as the orders from the States have ceased, we cannot look for much improvement till they again come along. Receipts, we understand, are to be liberal and early, so this, if correct, will tend to keep prices down.

EDMUND SCHLUTER & Co. report [July 31]:

Fluctuations in prices of Pará grades during the month were small. Following the active demand from America for old imports of Bolivian and Upriver fine prices of these two advanced to 42. 1d. and 45. 0½d., respectively. With cessation of this demand, and also owing to speculative sales of forward delivery, prices receded. Trade reports both in Europe and America show some improvement, but it is too early to say with confidence that normal conditions have returned. Meanwhile demand seems sufficient to absorb the available supplies, and prices should therefore remain about steady for actual rubber.

THE WORLD'S VISIBLE SUPPLY OF PARA, JULY 31.

	1908.	1907.	1906.	1905.	1904.	1903.
Tons.....	3692	2741	2830	2275	1665	2550
Prices, hard fine 3/10	4/9½	5/2¼	5/6¼	4/11¾	4/0½	

LIVERPOOL STOCKS OF AFRICAN RUBBER, JULY 31.

1908.....	391	1905.....	371	1902.....	516
1907.....	289	1904.....	473	1901.....	728
1906.....	388	1903.....	371	1900.....	823

R. Singlehurst & Co., Limited, have been registered in England with £100,000 capital to acquire the business of R. Singlehurst & Co., of Liverpool, and to adopt an agreement with G. Brocklehurst and F. Brocklehurst, and to carry on a business of merchants and shippers in Great Britain, at Para, and elsewhere. They are handlers to an important extent of crude rubber.

Plantation Rubber From the Far East.

EXPORTS FROM CEYLON (JANUARY 1—JUNE 29.)

[Including 8,000 pounds not the produce of Ceylon.]

	Pounds.		Pounds.
To Great Britain.....	182,617	To United States.....	94,600
To France.....	1,054		
To Germany.....	13,738	Total.....	306,805
To Denmark.....	186	Same dates, 1907.....	209,618
To Italy.....	880	Same dates, 1906.....	139,697
To India.....	896	Same dates, 1905.....	49,773
To Australia.....	12,834	Same dates, 1904.....	36,000

EXPORTS FROM THE FEDERATED MALAY STATES.

STATES.	1907.	1908.
Perak.....	pounds 98,591	189,633
Selangor.....	554,324	866,567
Negri Sembilan.....	208,610	325,958
Pahang.....		
Total.....	861,525	1,382,158

TOTAL EXPORTS FROM MALAYA (JANUARY 1—JUNE 26.)

[Including the produce of the Federated Malay States and some from neighboring territory, but not including Ceylon.]

	Singapore.	Penang.	Total.
To Great Britain.....	pounds 845,467	392,800	1,238,267
To Other Europe.....	37,467	74,000	111,467
To United States.....	400		400
To Japan.....	4,267		4,267
To Australia.....	11,500		11,500
To Ceylon.....	116,267	33,810	150,077
Total.....	1,015,368	500,610	1,515,978
Same dates, 1907.....	631,368	61,894	693,262
Same dates, 1906.....	257,600	40,534	298,134

YIELD OF PLANTATIONS IN POUNDS.

<i>Vallambrosa Rubber Co.:</i>	1908.	1907.
Four months ended July 31.....	70,785	69,069
<i>Kepitigalla Rubber Estates:</i>		
Twelve months ended March 31.....	32,264	42,612
<i>Linggi Plantations:</i>		
May.....	15,500	.....
<i>Anglo-Malay Rubber Co.:</i>		
Six months ended June 30.....	154,786	77,555
<i>Consolidated Malay Rubber Estates:</i>		
Six months ended June 30.....	39,381	19,002
<i>Beverlac (Selangor) Rubber Co.:</i>		
Six months ended June 30.....	19,615	10,200
<i>Perak Rubber Plantations:</i>		
May.....	3,226	2,337
<i>Highlands and Lowlands Pará Rubber Co.:</i>		
Six months ended June 30.....	81,656	.....

Rubber Receipts at Manaoas for July.

FROM—	1908.	1907.	1906.
Rio Purús-Acre.....	tons 206	234	421
Rio Madeira.....	292	180	266
Rio Jurua.....	52	31	26
Rio Javary-Iquitos.....	8	7	23
Rio Solimoes.....	11	16	15
Total.....	569	468	751
Caucho.....	143	101	143
Total.....	712	569	894

FORSYTH PATENT FOR PACKING WITH PLIABLE SHEET METAL INSERTION, SUSTAINED BY THE COURTS



Sheet Packing

U. S. Letters Patent, dated April 11, 1899 to James Bennett Forsyth, which has been the subject of litigation extending through the several United States Courts, to the United

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Springs

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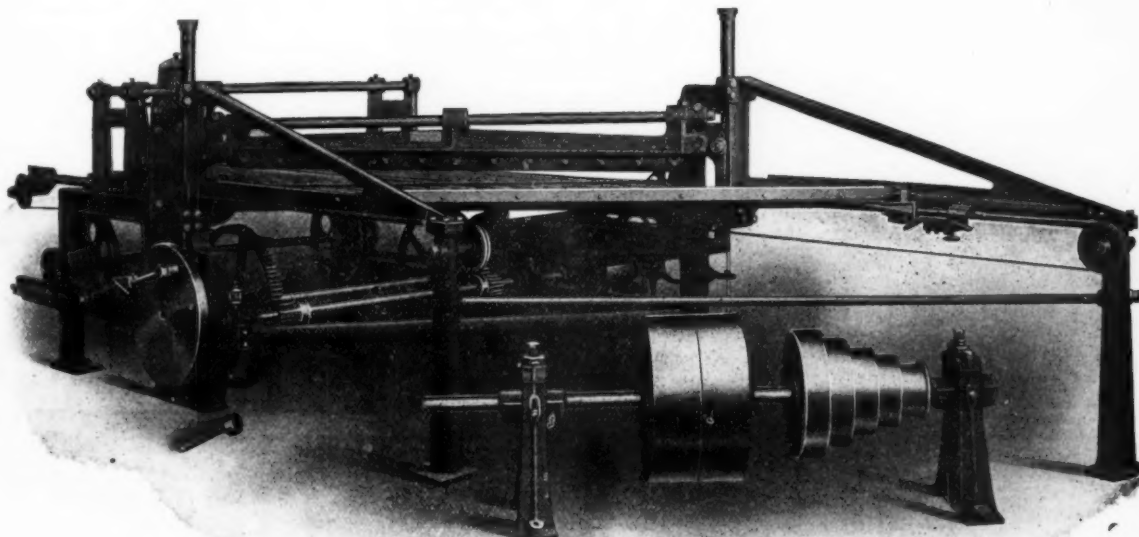
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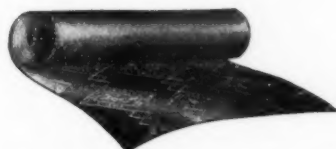


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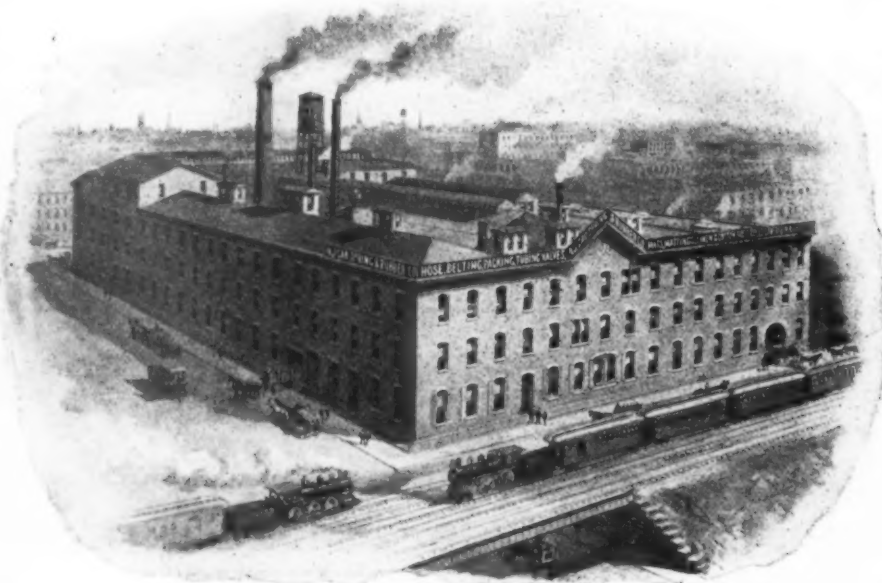
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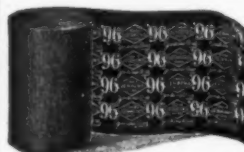
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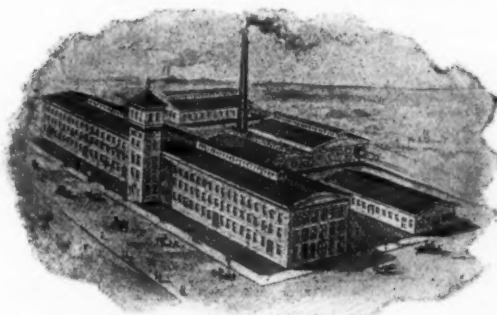


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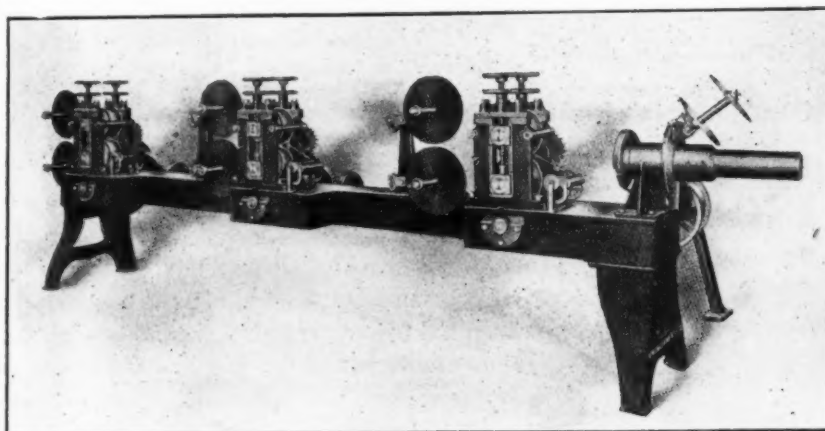
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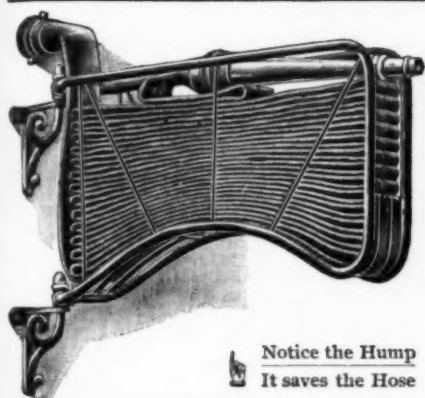
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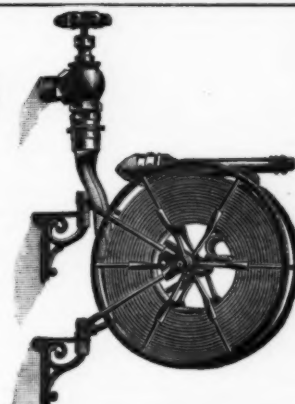
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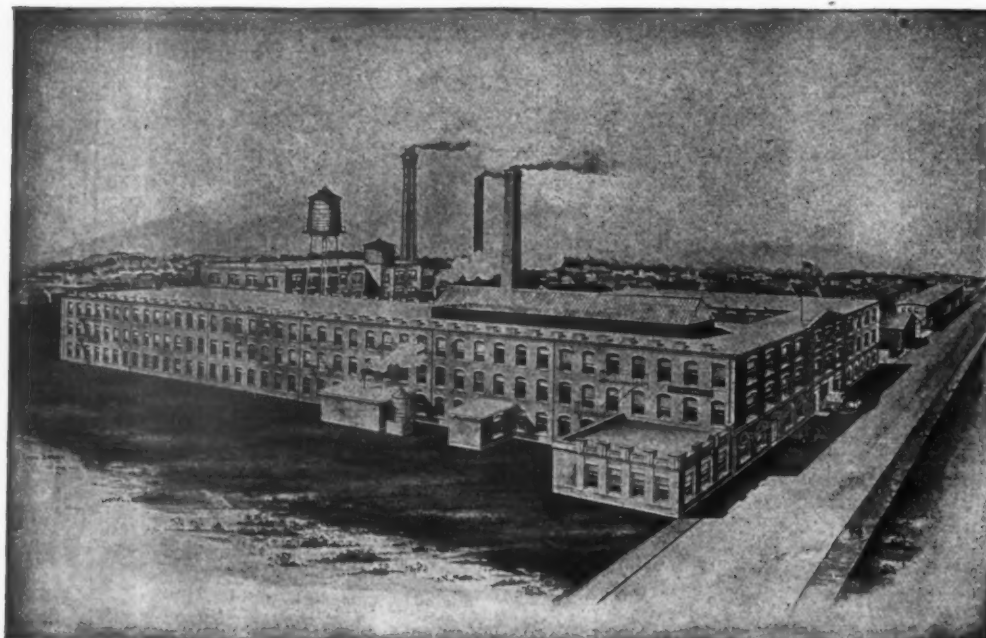
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CLOTHS FOR MACKINTOSHES.

Heavy Calendered Sheetings & Drills.

Silks, Velvets, Fine Specialties and Single Textures.

PLYMOUTH RUBBER CO.,
STOUGHTON, MASS.

Mould and Press Work.

The "Nerveze" Rubber Heel.

Mention The India Rubber World when you write.

MATTSON RUBBER CO., LODI, N. J.

New York Stock Rooms:
161 COLUMBUS AVE.

ESTABLISHED 1875.

Largest Manufacturers of Complete Line of
Tire Repair Stocks and Fabrics. Full Line of
Inner Tubes, etc.

Write for samples and quotations.

Patented Sponge Rubber Handle Bar Grips for Cycles and
Motorcycles. Moulded and Special Rubber Goods. Stamp
and Sponge Rubber. Hat Manufacturers' Rubber Supplies.

Unvulcanized compounds of all grades, and for all
purposes a leading specialty.

Mention The India Rubber World when you write.

1908 PRICE LIST

BAILEY'S RUBBER BRUSHES



**Bailey's
"Won't Slip"
Crutch Tip**

	PER DOZ.		PER DOZ.		PER DOZ.
Bailey's Rubber Bath Brush,	\$12.00	Bailey's Rub. Tooth Brush, No. 1,	\$2.00	Bailey's Rubber Bubble Blower,	\$0.75
" " Shampoo " "	6.00	" " " " No. 2,	2.50	" " Glove Cleaner,	.75
" " Complexion " "	4.00	" " Manicure Brush,	2.00	" " Massage Roller,	4.00 doz.
" " Petite Complexion Brush,	3.00	" " Sewing Fingers,	3.50 gro.	" " Body " "	16.00 doz.
" " Facial Brush,	4.00	" " Teething Ring,	.75	" " Skin Food,	4.00 doz.
" " Hand " "	4.00	" " Heel Cushion,	2.00	" " Rubber Exerciser,	5.00 each
" " Toilet " "	2.00	" " Soap Dish,	2.50		

Bailey's "Won't Slip" Crutch Tip (all sizes), \$1.00 per doz. All Goods sent prepaid by us

C. J. BAILEY & CO.

Manufacturers and Patentees

22 BOYLSTON STREET - - - BOSTON, MASS., U. S. A.

Mention The India Rubber World when you write.

F. H. APPLETON & SON

MANUFACTURERS OF

RECLAIMED RUBBER

No. 185 Summer Street,

BOSTON, MASS.

Factory: Franklin, Mass.

Telephone: Oxford, 460

Mention The India Rubber World when you write.

JOSEPH STOKES RUBBER CO.

MANUFACTURERS OF

HARD RUBBER GOODS

QUALITY AND SERVICE GUARANTEED

Main Office and Factory:
TRENTON, N. J.

Western Branch:
40 DEARBORN STREET
CHICAGO, ILL.

Mention The India Rubber World when you write.

MADE IN
AMERICA BY AMERICANS

FEATHEREDGE

RUBBER SPONGES

"N" Tire Rubber Sponge Co.
35-37-39-41 E. Indiana St., Chicago, Ills.

THE LUZERNE RUBBER CO.

MANUFACTURERS

HARD RUBBER GOODS

Office and Works, TRENTON, N. J.

Mention the India Rubber World when you write.

THE S. P. WETHERILL COMPANY'S
No. 600 RED OXIDE

HAS GREATER COLORING CAPACITY THAN ANY
OTHER RED PIGMENT

925 Chestnut Street, PHILADELPHIA

THE RUBBER PRODUCTS CO.

BARBERTON, OHIO

Manufacturers of

Mechanical Goods, Druggist Sundries, Fruit Jar Rings

Mention The India Rubber World when you write.

The Atlas Chemical Co.

NEWTONVILLE, MASS.

MANUFACTURERS OF

SULPHURET OF ANTIMONY

FOR THE RUBBER TRADE.

Mention The India Rubber World when you write.

Patents, Trade Marks, Copyrights.
PENNINGTON HALSTED SOLICITOR AND
COUNSEL

49 WALL STREET, NEW YORK.

CASES RELATING TO RUBBER A SPECIALTY.

Connections in all Patent Granting Countries.

REPUBLIC

AUTOMOBILE TIRES

The Higher Grade
Mechanical Rubber Goods

COTTON RUBBER LINED FIRE HOSE

SOLID RUBBER CARRIAGE AND TRUCK TIRES

BRANCH STORES

New York, 232 West 58th St.
Boston, 25 Irvington St.
Philadelphia, 839 N. Broad St.
Chicago, 116 Lake St.
Detroit, 246 Jefferson Ave.

St. Louis, 3964 Olive St.
Denver, 1721 Stout St.
San Francisco, 119 Beale St.
Cincinnati, 5th and Walnut Sts.

Toledo, 2815 Monroe St.
Indianapolis, 308 S. Illinois St.
Cleveland, 1129 Euclid Ave.
Pittsburg, 136 6th St.
Seattle, 1419 Broadway.

THE REPUBLIC RUBBER CO., Youngstown, Ohio

FREE FROM HARMFUL SUBSTANCES



Unadulterated Corn Oil Substitute for Rubber

USED WITH BEST RESULTS IN MANY
PROMINENT RUBBER MILLS

**CORN PRODUCTS REFINING CO., 26 BROADWAY,
NEW YORK.**

ESTABLISHED 1877.

THE SEAMLESS RUBBER COMPANY

MAKERS OF

HIGH GRADE DRUGGIST'S
RUBBER SUNDRIES

ALSO

SEAMLESS AND HAND-MADE
RUBBER GLOVES



CORRESPONDENCE

SOLICITED

MAIN OFFICE AND FACTORY:
NEW HAVEN, CONNECTICUT.

NEW YORK OFFICE.....296 BROADWAY.
CHICAGO120 FRANKLIN STREET.
BOSTON.....105 SUMMER STREET.
MONTREAL.....72 ST. ANTOINE STREET.
LONDON37 CITY ROAD, E. C.

Mention The India Rubber World when you write.



Retailers Who Sell "Lycomings" Have One Tremendous Advantage

Of course the great advantage that retailers have who sell Lycoming Rubbers lies in the unexcelled quality of the goods. That goes without saying. But there's another great advantage---a tremendous help in selling goods---the high-grade advertising that we supply to our trade.

Here's our latest banner---the Boy and the Boots---15x25 inches in size, and in ten colors. One of the most appealing things to anybody, from three to a hundred, that ever went into a window.

If you are selling "Lycomings" be sure your jobber supplies you. If you are not selling "Lycomings," there never was a better time to start.

LYCOMING RUBBER CO.

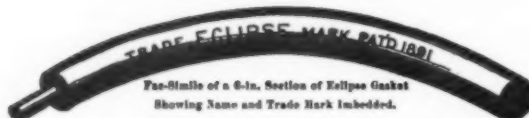
WILLIAMSPORT, PA.

The Eclipse Sectional Rainbow Gasket

$\frac{3}{8}$ in. }
 $\frac{1}{2}$ in. } For Hand Holes.
 $\frac{5}{8}$ in. }



$\frac{3}{4}$ in. }
 $\frac{7}{8}$ in. } For Extra Large Joints.
 1 in. }



The Eclipse Gasket is red in color, and composed of the celebrated Rainbow Packing Compound. It will not harden under any degree of heat, or blow out under the highest pressure, and can be taken out and repeatedly replaced. Joints can be made in from three to five minutes.

The Peerless Spiral Piston and Valve Rod Packing.

 It will hold 400 pounds of
 steam.

Once Tried Always Used.



 Will run twelve months in
 high speed engines.

Success Semi-Metallic, Diagonal Expansion Spiral Packing, Rainbow Core.

For Steam,
 Low or High Pressure.



For Hot or Cold Water
 and Ammonia Machines.

Patented October 31, 1899.

HOSE, BELTING, PACKING, VALVES and RUBBER TILING.

Largest manufacturers in the world of fine mechanical Rubber Goods.
 Send for Catalogue.

MANUFACTURED, PATENTED AND COPYRIGHTED EXCLUSIVELY BY

The Peerless Rubber Manufacturing Co.

16 WARREN STREET, NEW YORK.

88 CHAMBERS STREET, NEW YORK

LIST OF AGENCIES' ADDRESSES OF THE PEERLESS RUBBER MANUFACTURING CO.

Detroit, Mich.—24 Woodward Ave.; Chicago, Ill.—202-210 South Water St.; Indianapolis, Ind.—18 S. Capitol Ave.; Louisville, Ky.—111-121 W. Main St.; New Orleans, La.—Cor. Common and Tchoupitoulas Sts.; Omaha, Neb.—1218 Farnam St.; Richmond, Va.—1323 E. Main St.; Philadelphia, Pa.—250 S. Fifth St.; Dallas, Texas—177 Elm street; Memphis, Tenn.—228 Front St.; St. Louis, Mo.—1213 Locust St.; Denver, Col.—1631-1639 17th St.; San Francisco, Cal.—17-23 Beale St. and 12-24 Main St.; Seattle, Wash.—Railroad Way and Occidental Ave.; Kansas City, Mo.—1221-1223 Union Ave.; Waco, Texas—709-711 Austin Ave.; Pittsburg, Pa.—425-427 First Ave.; Atlanta, Ga.—7-9 S. Broad St.; Columbus, Ohio—Cor. Long and Third Sts.; Cleveland, Ohio—61 Frankfort St.; Buffalo, N. Y.—379-183 Washington St.; Boston, Mass.—110 Federal St.; Syracuse, N. Y.—212-214 S. Clinton St.; Rochester, N. Y.—25 E. Main St.; Houston, Texas—113 Main St.; Baltimore, Md.—37 Hopkins Place.



GOODRICH

Molded Rubber Goods

REGULAR AND SPECIAL MADE



Our molded goods department is a big factory in itself. The recent addition of another five story building largely devoted to the manufacture of this line of rubber goods gives us unequaled facilities for taking care of orders. Whether a staple article or a new special made product, we are provided with an equipment that insures quick and satisfactory service.



SAMPLES AND PRICES AT YOUR COMMAND

The B. F. Goodrich Company

AKRON, OHIO



CHICAGO
PHILADELPHIA
BOSTON

ST. LOUIS
DENVER
DETROIT

CLEVELAND

PARIS

LONDON

Factories: AKRON, OHIO

Our Products are also

Handled in

NEW YORK AND BUFFALO

by

THE B. F. GOODRICH COMPANY

of New York

and in

SAN FRANCISCO, LOS ANGELES
SEATTLE



NEW YORK BELTING AND PACKING CO., Ltd.

MANUFACTURERS OF THE HIGHEST GRADES OF
ALL KINDS OF HOSE

Including Air Brake, Air Drill, Brewers', Car Heating, Dredging Sleeves, Engine and Tender, Fire, Garden, Gas, Linen, Mill, Pneumatic Tool, Signal, Steam, Suction and Water Hose

Also a Complete Line of Fine Mechanical Rubber Goods

Nos. 91-93 CHAMBERS STREET, NEW YORK

Mention The India Rubber World when you write.

ECCE SIGNUM.



THOROUGHLY RELIABLE.

The policy of furnishing only the finest goods that can be produced with perfect materials, latest and best machinery, and highly skilled workmen of long experience, has been, is now, and will continue to be, the policy of

The Mechanical Rubber Company, CHICAGO, ILL.

Branch Store, No. 1810 Blake Street, Denver, Colo., where we carry a full line of goods.

Manufacturers of all kinds of rubber goods for mechanical uses—Hose, Belting, Packing, Gaskets, Bicycle Tires, Specialties, Moulded Goods, Etc., Etc.

If you are unable to satisfy your trade with goods you are supplying,
If you are in search of good goods at fair prices,
If you cannot get quick deliveries,
If you are not getting fair value for your money,
IN ANY EVENT,

SEND TO US FOR SAMPLES AND
QUOTATIONS.
WE CAN SUIT YOU EVERY WAY.

FACTORY, GRAND AVE. & ROCKWELL STS

THE MECHANICAL RUBBER CO., 230 Randolph St., Chicago, Ill.

Mention The India Rubber World when you write.

WILLIAM T. BAIRD, President

ROBERT B. BAIRD, Vice President

RUBBER TRADING COMPANY

38 MURRAY STREET, NEW YORK

TELEPHONE: 118 CORTLANDT

BOSTON OFFICE: 161 SUMMER STREET
TELEPHONE: 1983-2 OXFORD

TRENTON, N. J., OFFICE: 103 EAST STATE ST.
F. F. FOX, Representative. TELEPHONE: 3532-D, TRENTON.

CABLE ADDRESS CHAUNBAIR, NEW YORK and BOSTON

CRUDE RUBBER

CRUDE RUBBER CONSIGNMENTS SOLICITED

Washed and Broken Down (or Refined) Rubber a Specialty.

Mention The India Rubber World when you write.

Largest Dealer in Russia
Old Russian Rubber Boots and Shoes
M. J. WOLPERT
ODESSA, Russia

LITHARGE

for Rubber Manufacturing

...WRITE FOR PRICES...

PICHER LEAD COMPANY

NEW YORK, 100 William Street

CHICAGO, 511 Tacoma Building

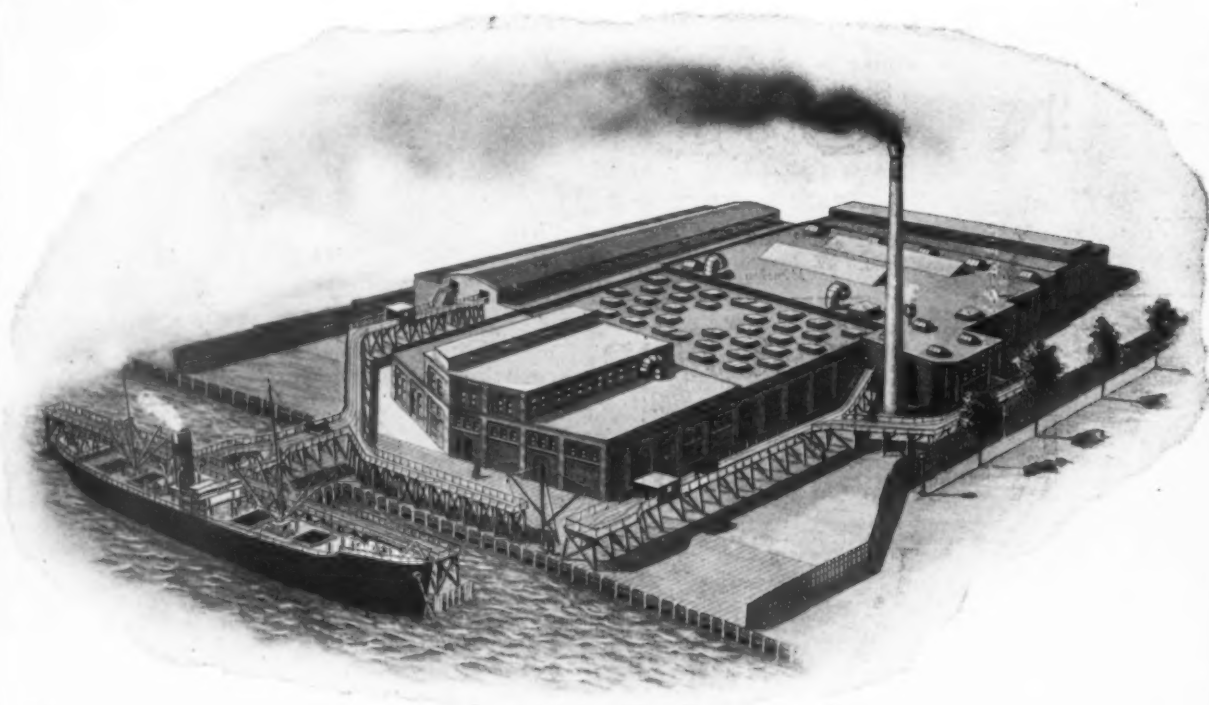
In our NEW FACTORY, from which shipments of

WHITING

are now being made, we are PLEASED to know that our efforts to produce goods of a quality superior to those heretofore made by us (which have established with the trade the standards of the respective grades) have been completely successful.

In thus ELEVATING the STANDARDS we make NO ADDITIONAL CHARGE for IMPROVED QUALITY.

It is with GREAT SATISFACTION that we make this announcement to our customers and the TRADE generally.



Our capacity is such that we can now fill orders promptly.

The same conditions prevail as to "WESTMINSTER" and "VICTORIA" ENGLISH CLIFFSTONE PARIS WHITE.

CONFIRM THESE FACTS BY APPLYING FOR SAMPLES AND QUOTATIONS

The H. F. Taintor Manufacturing Co.

No. 200 WATER STREET, NEW YORK CITY

**PARANITE
AND PEERLESS****RUBBER COVERED WIRES AND CABLES****Carriage Tires****SOFT RUBBER SPECIALTIES**

AND

Indiana and Wabash Single Tube Bicycle Tires

MANUFACTURED BY

The Indiana Rubber and Insulated Wire Co.

JONESBORO, INDIANA

**THE MASON****Reducing Valves**

ARE THE WORLD'S STANDARD VALVES.

For automatically reducing and absolutely
maintaining an even steam or air pressure.*They are adapted for every need and guaranteed
to work perfectly in every instance.*WRITE FOR FULL INFORMATION AND
SPECIFIC REFERENCES.**THE MASON REGULATOR CO. Boston,
Mass., U.S.A.**Directory of the Rubber Trade for the United States and Canada now
ready. Price \$3.**THE INDIA RUBBER PUBLISHING CO.,**
395 Broadway, New York.

We are making a

SUBSTITUTE FOR RUBBERwhich is a vegetable oil compound con-
taining no mineral and which will
Vulcanize at the SAME degree of temperature as
rubber and which gives**FIRMNESS, TENACITY, DUCTILITY, AND
CONTINUED RESISTANCE TO OXIDATION****NATIONAL CO.****105 Clybourn Place - Chicago, Ill.****L. & M. RUBBER WORKS,
CANTON, OHIO.**Manufacturers of high class druggists' sundries.
Regular and Special work solicited.**AVERY CHEMICAL COMPANY****88 Broad Street, BOSTON**

OFFER

TALC LITHOPONE BARYTES IRON OXIDE**Sulphurets of Antimony****Turpentine, Benzol, Special Solvents and All Chemicals Required in the Manufacture
of Rubber Products.**

—WRITE FOR PRICE-LIST.—




BOSTON.

CHICAGO.

PHILADELPHIA.

J. H. LANE & CO.

110 WORTH ST., NEW YORK.

BELT SAIL WIDE DUCKS **PAPER FELTS** **OUNCE GOODS** **AUTOMOBILE** **TIRE FABRICS**
ARMY DUCK **AND BICYCLE**
OSNABURGS

SHEETINGS AND DRILLS. SEA ISLAND, EGYPTIAN, AND PEELER YARNS,
AND FABRICS IN REGULAR AND SPECIAL CONSTRUCTION.

*Mention The India Rubber World when you write.***PARKER, STEARNS & COMPANY**

Makers of

Fine Rubber Goods

228 & 229 SOUTH STREET

NEW YORK



THE CANTON RUBBER CO.
CANTON, OHIO

Manufacturers of

FIRST CLASS SEAMLESS**DRUGGIST SUNDRIES and TOILET GOODS**

Trade-Mark.

Best facilities for

Regular and Special Moulded Work**Springfield Tire & Rubber Company**

Manufacturers of

MECHANICAL RUBBER GOODS, BUMPERS, SPRINGS, BABY CUB
TIRES, TRUCK TIRES, PACKING, TUBING, SPRINGFIELD
ABRASIVE POLISHING WHEELS AND BLOCKS, BATH
BRUSHES, RUBBER HEELS, ETC.

14-18 North Mechanic Street, SPRINGFIELD, OHIO, U. S. A

STEPHEN P. SHARPLES**ANALYTICAL AND CONSULTING CHEMIST**

Twenty-five Years' Experience in
Methods for Recovering Rubber
from Waste.

Analysis Made of Compounded
Rubbers

OFFICE:**No. 26 Broad Street, Boston, Mass.****THE DAYTON RUBBER MFG. CO.**

MAKERS OF

Mechanical Rubber Goods**DAYTON, OHIO***Mention the India Rubber World when you write.***Special Notice TO THE Rubber Planting World****PARA, CASTILLOA, CEARA, ETC.**

Seeds and stumps forwarded to all parts of the World. Orders being booked from Planters, Merchants, Govt. Botanical and Agricultural Departments, Officials, Consuls, Missionaries, Lawyers, etc., from all parts of the Globe.

A Government order by wire, Khartoum via Cairo (Egypt) 7th March, 1908: "Send 300,000 Ceara seed, 10,000 ditto stumps, 100,000 Hevea seed, 10,000 ditto stumps, 5,000 Castilloa seed."

An Agricultural Department order from Dutch West Indies, Paramaribo, 15th January, 1908: "Please send me as soon as you have fresh seed 90,000 (ninety thousand) seeds of Hevea Brasiliensis; your method of packing is all right; the seeds shipped last year to the Superintendent of the Botanic Garden arrived in good condition."

A planting Company's order by telegraph, Berlin, 7th March, 1908: "Please send 50,000 Hevea stumps, arrival in May, Hamburg Noerman Line, the purchase money to be paid on signing, and in exchange for documents Hong Kong & Shanghai Banking Corporation. Please confirm order."

A Surinam Planter's order who purchased 20,000 Hevea seeds last year, 17th February, 1908: "I now order from you 20,000 Hevea seeds to be sent by parcel post packed as before; please send selected seed from mature trees. The best results we got are from your seeds packed as above and sent by Parcel post."

Special offer of seeds and stumps, with circulars, on view at the office of this paper and post free on application.

Seeds of celebrated Caravonica and Spence Cotton. For green manuring, Crotonaria Striata, Vigna, Groundnuts, etc. Price on application.

See further particulars in our advertisement in this paper, page 41.

Telegraphic Address: **J. P. WILLIAM & BROS.**
 William, Henaratgoda, Ceylon, Tropical Seed and Plants Merchants,
 Liber's, A.L. and A.B.C. Codes used. Henaratgoda, Ceylon.
 Also private codes.

Mention The India Rubber World when you write.

ANTHONY BIRNBAUM, President and Treasurer

B. & G. RUBBER COMPANY**B. & G. WEAR-WELL PACKING****Automobile Tubes and Tires**

High and low pressure—Self lubricating—Impervious to action of steam, oils, acids and alkalis. Especially adapted for mining work and steam hammers

BICYCLE TUBES and TIRES

519 FRENCH STREET,

:: :: :: :: :: :: ::

R. F. GUNTHER, General Manager
Sole Manufacturers
of the

Automobile Tires Repaired

ERIE, PENN'A.

The Publishers' Page

"The Rubber Man's Paper."

THE publishers of this paper have been getting out some new circulars advertising its objects, character, and so on, to be sown in new ground—for we believe in the idea of practising what one preaches, and particularly if the text is "advertising pays." One question that arose was in regard to a suitable heading, and when all the suggestions were in, the circular was headed "THE RUBBER MAN'S PAPER." A glance through the correspondence files of this office certainly warrants the use of this heading. Here are subscription orders from every class of type of rubber man known to us; the advertising columns reveal the support of every class having anything to sell or wanting to buy anything in the rubber line; and, besides, the paper reaches a large but indefinite class who are not rubber men, but who have business interests connected more or less with rubber. We like the heading of this paragraph as a description of THE INDIA RUBBER WORLD and shall continue to attempt to make the paper merit it. This is the final issue of another year, by the way; the next issue will be the initial number of the twentieth year.



A Rubber Library.

We believe that the library of THE INDIA RUBBER WORLD is not equaled to any other collection of printed matter relating to india-rubber and gutta-percha, including the history of their discovery and uses, and description of the countries and their origin. Besides all the standard printed works on these subjects, the library embraces some rare books, together with thousands of pamphlets, maps, photographs, patent specifications, legal decisions, files of journals, and collections of press cuttings, all arranged for easy reference. The library also embraces current files of newspapers from various rubber producing centers, for the especial interest of visitors. These, and the whole contents of the library, are accessible always to our friends, who are cordially invited to make use of the same.



Advertising that Pays.

THE INDIA RUBBER WORLD aims at rendering the trade a service in its advertising department no less than in the editorial pages. The quality of the results attained in this field is attested by the continued presence in its pages of so large a percentage of the advertising patronage with which the paper started nineteen years ago. There are in the paper to-day advertisements of important firms who have occupied the same position in the paper in every issue since the first. THE INDIA RUBBER WORLD has been a medium whereby—

(1) Manufacturers of rubber good have reached dealers. Heads of large manufacturing concerns have written:

"We have been a full-page advertiser since the first issue and know that it has kept us before all consumers in the rubber world"

"Our advertising has been in THE INDIA RUBBER WORLD since the first day it was printed. It is the best medium for reaching rubber interests."

"From its inception we have been regular advertisers in THE INDIA RUBBER WORLD. We find it in the hands of our largest customers everywhere."

(2) Makers of rubber machinery and dealers in materials form relations with rubber goods manufacturers. Advertisers in this field have testified:

"We consider the INDIA RUBBER WORLD indispensable as an advertising medium for our line of work—rubber mill machinery. We consider it, for a trade paper, in a class by itself."

"THE INDIA RUBBER WORLD is the best of all mediums for advertising goods in our line. Results have been tangible and very satisfactory."

"THE INDIA RUBBER WORLD has given us better results in proportion to the money invested than any other paper that we have ever used. It sold goods for us all over the world."

(3) A wide and varied class of other advertisers have accomplished their wishes—whether seeking valuable information, or to dispose of inventions, or to obtain positions, and so on through a long list of business wants.

Advertisements in THE INDIA RUBBER WORLD are circulated; they are read; they bring results.



Our "Trade Directory" on the Nile.

MORE evidence of progress on the Nile! This time in the headwaters of that famous river, which is becoming as "up-to-date" as it is classic. From the city of Khartoum, made notable in modern times by General "Chinese" Gordon—where, under English auspices, is being created a new colonial government—at the junction of the White Nile and the Blue Nile to form the greater Nile that everybody knows about—the head of the local Woods and Forests Department writes to THE INDIA RUBBER WORLD ordering a copy of the "Rubber Trade Directory" for the use of his office. The book has been despatched in due course, in the hope that it will prove not only of interest and value to the recipient, but of ultimate benefit to the number of rubber manufacturers and dealers of Akron, Boston, Cincinnati, Detroit, Elizabeth, Fairfield, Garfield, Hartford, Indianapolis, Jeannette, Kokomo, Lycoming, Malden, New York—and all down the line. The people in the region referred to, in the Soudan government, are not beginning the use of rubber goods much later in the world's history than the people of England and the United States, and in time will use such goods, no doubt, as freely as in any other country. For which reasons we are glad to introduce to their notice so important a list of rubber goods makers.

Any one else can have the book at the same price—\$3, prepaid.



Praise from a Diplomat.

THE INDIA RUBBER WORLD is the subject of a very handsome compliment from a distinguished South American diplomat, which we are tempted to repeat. General Rafael Uribe Uribe, of Columbia, who is accredited in a diplomatic capacity to Brazil and two or three other countries, appeared recently before a special meeting of the Sociedad Agricola de Colombia, at Bogota, to discuss the cultivation of *Hevea* rubber. He said that for the purpose of studying this subject he had visited the Amazon valley, and added:

"Furthermore, for the purpose of corresponding with this Congress, I have always kept before me the literature dealing with rubber. This included the latest books on the subject, as well as a number of reviews such as THE INDIA RUBBER WORLD and *Tropical Life*—books and journals which I recommend to all those who wish to devote themselves to rubber cultivation—not blindly accepting all their statements as being applicable to Colombian conditions, but first submitting them to a careful analysis."



Ranks With Bread and Butter.

TO THE INDIA RUBBER WORLD—Gentlemen: - - - I would not be without my INDIA RUBBER WORLD. It is as valuable to me as my bread and butter. - - - Yours truly,

THE ALUMINUM FLAKE COMPANY

Physical condition remarkable. MINERS AND REFINERS OF
Base, Metallic Aluminum
Gravity 2.58
Absolutely Inert

It toughens Rubber, gives it life and lightens gravity

ALUMINUM FLAKE

An ORIGINAL PIGMENT, Suited to All Lines of Rubber Work

THE ALUMINUM FLAKE COMPANY, Akron, O.

The Carter Bell Mfg. Co.

150 Nassau Street, New York

WHITE and BLACK

Rubber Substitutes

As a Filler
will make Rubber Goods that
will stand Heat
or Acid.

Fossil Flour

**OXFORD
TRIPOLI
COMPANY**

1167 First Ave.
NEW YORK

Massachusetts Talc Co.

Miners and Millers of High Grade Domestic

TALC AND SOAPSTONE

Samples and Quotations Submitted for Immediate
and Future Deliveries

OFFICES:

NORTH ADAMS, MASS.

Mines: ROWE, MASS.

Mills: ZOAR, MASS.

Telephone:
"Guthrie, Birmingham."
4322 Birmingham.

THE RUBBER CHEMICAL COMPANY, Ltd.,
SERINGA BUILDINGS, LUDGATE HILL, ENGLAND.

"ATMOID"
The lightest Rubber Drug known.

"NANTUSI"
for vulcanising and preserving Rubber.

SUBSTITUTES, free from Acid
(Seringa Brand), WHITE, DARK AND RED.

SULPHUR SPECIALLY PREPARED FOR THE RUBBER TRADE.
One of our largest customers report that it gives on analysis, Mineral
Matter .036%, reaction neutral; Arsenic absent, and in our opinion is an
exceptionally good sulphur and free from acid. CORRESPONDENCE
INVITED.

**RICKABY RUBBER
MANUFACTURING CO.**

Manufacturers of
RECLAIMED RUBBER

OFFICE AND FACTORY

South Framingham, Massachusetts

ERIE RUBBER WORKS

521 FRENCH STREET

ERIE, PA.

Manufacturers of

Government Standard Bevel Special Patented Self-Sealing
Bottle Stoppers Rubber Stoppers

Write for Prices

SULPHUR

BROOKLYN SULPHUR WORKS.
Manufacturers of:
Double Refined and Sublimed
FLOUR SULPHUR
Especially adapted to the use of
RUBBER MANUFACTURERS
AND WARRANTED FREE FROM GRIT.
BATTELLE & RENWICK
163 Front St., New York.

A MAGAZINE OF TROPICAL PLANTING.

L'Agriculture des Pays Chauds

Monthly Bulletin of JARDIN COLONIAL of France and
of the Experimental Stations in the Colonies. Organ
of the Ministry of the Colonies—Inspection general
of Colonial Agriculture. Record of Official Regula-
tions, Decrees, etc. Special and Authentic Articles
on Various Tropical Cultures. Prominent Attention
to INDIA-RUBBER.

Annual Subscription: 20 francs (\$4).

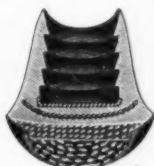
AUGUSTIN CHALLAMEL

17, Rue Jacob, PARIS, FRANCE

THE FOSTER FRICTION PLUG CRUTCH AND CANE TIPS

(IN 2 SIZES)

ARE MADE OF BEST RUBBER. Don't Slip. Outwear All Others.



Foster, Catspaw and Tredair Heels are the only Heels made under FOSTER PATENTS and in common with the

FOSTER PATENTED FRICTION PLUG

Cannot Be Made by Other Concerns

Handsome Profits to Dealers

170 Summer St.
BOSTON, MASS.

FOSTER RUBBER CO.

Factory,
WALPOLE, MASS

DERMATINE

Registered U. S. A. Patent Office No. 50018.



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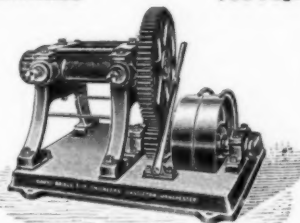
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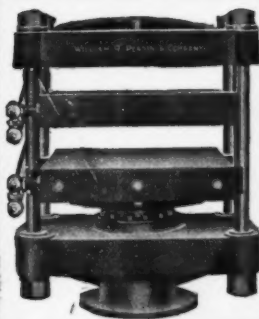
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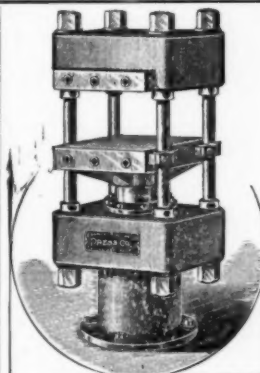
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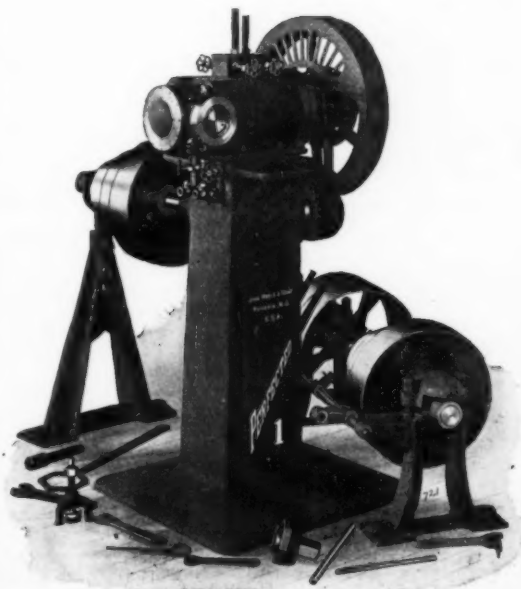
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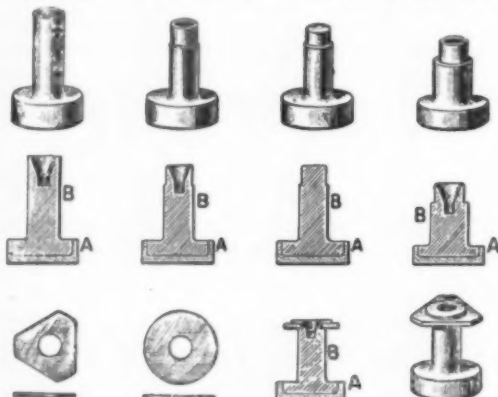
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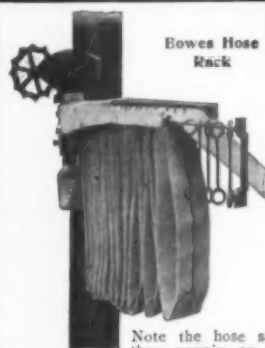
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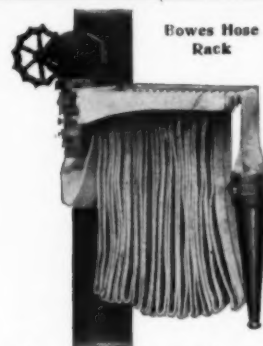
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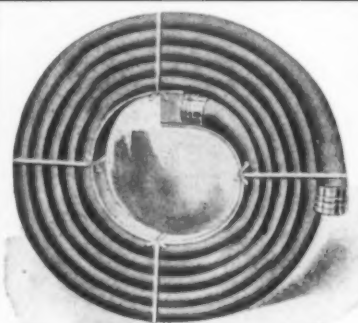
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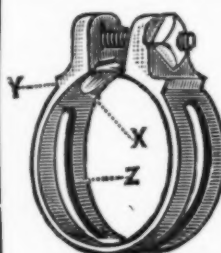
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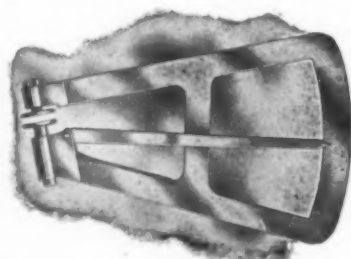
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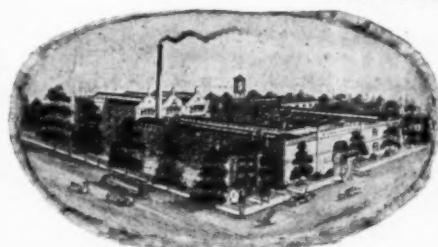
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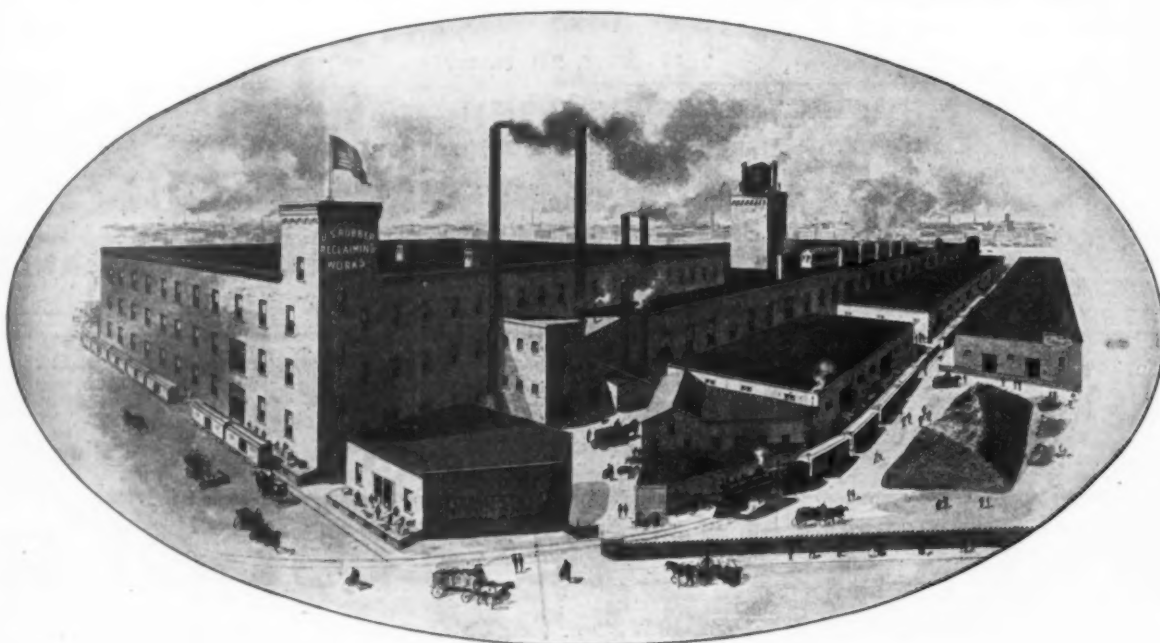
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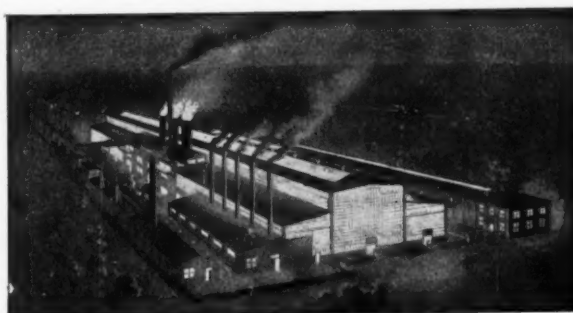
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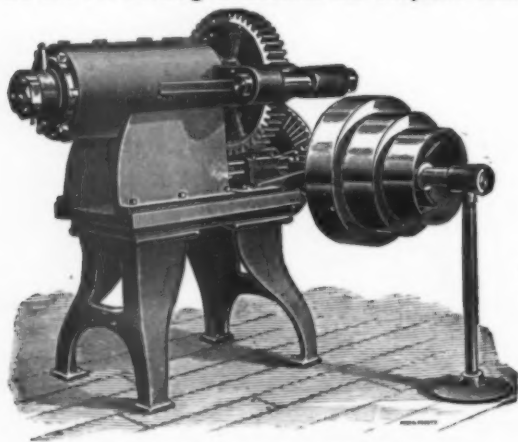
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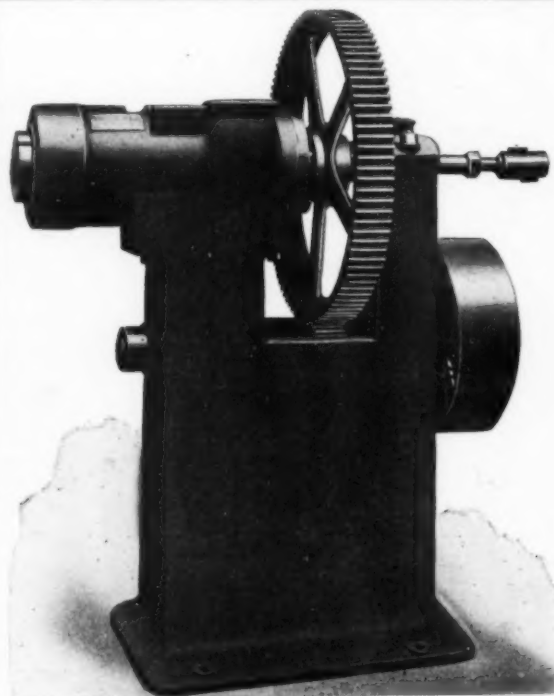
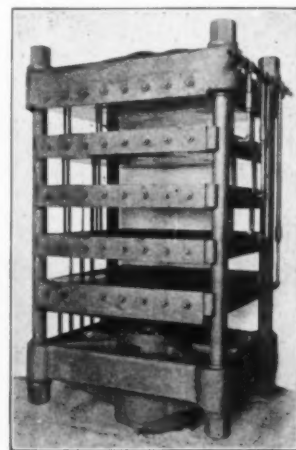
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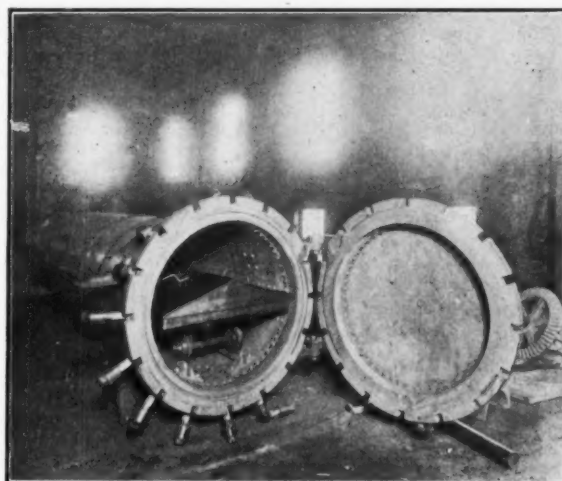
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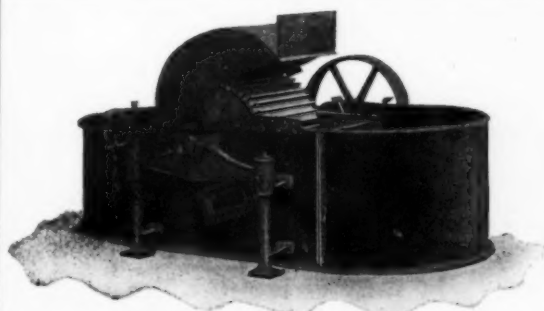
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INDEX TO ADVERTISERS

	Page.		Page.		Page.		Page.	
A		D		L		S		
Acme Rubber Mfg Co.	11	Danversport Rubber Co.	39	L. & M. Rubber Works.	41	S. & L. Rubber Co.	35	
Adamson, C. F.	35	Davidson Rubber Co.	59	Lake Shore Rubber Co.	12	Sayen, Osgood.	2	
Adamson Machine Co.	42	Davol Rubber Co.	14	Lane & Co., J. H.	24	Scheel, Wm. H.	2	
Alton Machine Co.	38	Dayton Rubber Mfg. Co.	24	Le Caoutchouc & La Gutta		Schnurmann, J.	37	
Akron Rubber Engineering Co.	10	Derby Rubber Co.	39	Percha		Schrader's Sons, Inc., A.	32	
Aladdin Rubber Co.	55	Dermatine Co., Ltd.	27	Leslie, A. W.	43	Schwab & Co.	37	
Alden & Co., George A.	9	Devine, Joseph P.	43	Loewenthal & Co., B.	2	Seamless Rubber Co.	16	
Alderfer Crate Co.	24	Dien, Ch.	32	Loewenthal & Sons, J.	36	Sharples, Stephen P.	24	
Alkali Rubber Co.	33	Dixon Crucible Co., Jos.	42	Luzerne Rubber Co., The.	15	Shelp Mfg. Co., Henry H.	34	
Allen Mfg. Co., W. D.	34	Dos Santos, C. P.	38			Speaight, Geo. W.	38	
Alumunum Flake Co.	26	Dubled, Ed., & Co.	32			Springfield Tire & Rubber Co.	24	
American Hard Rubber Co.	13	Dunlop Tire & Rubber Goods Co	13			Stamford Rubber Supply Co.	23	
American Rubber Reclaiming Co.	2			M		Star Rubber Co.	27	
American Talc Co.	31			McGrory, Philip.	37	Stockton Rubber Co.	39	
American Tool & Machine Co.	35			Manhattan Rubber Mfg. Co.	12	Stokes Rubber Co., Jos.	15	
American Vulcolite Co.	423	E		Mason Regulator Co.	23			
American Wax Co., F. H.	15	Eastern Reclaimed Rubber Co.	34	Massachusetts Chemical Co.	423	T		
Appleton & Son, F. H.	15	Egeestoff's (Georg) Salzworke.	29	Massachusetts Talc Co.	26	Taintor Mfg. Co., H. F.	22	
Atlantic Rubber Co.	35	Elkhart Rubber Works.	8	Mattison Rubber Co.	14	Textile-Finishing Machinery Co.	38	
Atlas Chemical Co.	15	Empire Rubber Mfg. Co.	4	Maurer, Ed.	424	Thropp's Sons Co., John B.	42	
Avery Chemical Co.	23	Erie Rubber Works.	26	Maywald, F. J.	1	Thropp, William E.	42	
		Eureka Fire Hose Mfg. Co.	4	Mechanical Fabric Co.	12	Trenton Rubber Mfg. Co.	8	
B				Mechanical Rubber Co.	20	Trenton Scrap Rubber Supply		
B. & G. Rubber Co.	24	F		Meyer Bros.	36	Co		
Bailey & Co., C. J.	14	Fabric Fire Hose Co.	4	Middlesex Last Co.	27	"Tropical Agriculture"	36	
Barrett Mfg. Co.	34	Farrel Foundry & Machine Co.	45	Moers, Albert A.	36	Tama River Plantation Co.	59	
Battelle & Renwick.	26	Faultless Rubber Co.	32	Morgan & Wright.	29	Turner, Vaughn & Taylor Co.	43	
Bers & Co.	37	Federal Rubber Co.	32			Tyer Rubber Co.	60	
Berzen, M., & Co.	36	Fillingham, M. P.	27	N		Type & King.	29	
Biggs Boiler Works Co.	43	Poster Rubber Co.	27	N. Tire Rubber Sponge Co.	15	Tyner Bros.	27	
Bickens & Sons, S.	36			National Co.	23	U		
Birmingham Iron Foundry	7	G		National India Rubber Co.	41	United States Rubber Co.	17	
Bloomington Soft Rubber Wks	6	Gabriel & Schall.	29	New England Butt Co.	11	U. S. Rubber Reclaiming Wks.	40	
Boomer & Boschert Press Co.	31	Goodrich Co., B. F.	19	New Jersey Car Spring & Rubber		U. S. Waste Rubber Co.	28	
Boston Belting Co.	3	Gough Co., Wallace L.	33	Co		V		
Boston Die Co.	1	Grassell Chemical Co.	29	New Jersey Rubber Co.	39	Van der Kerckhove.	34	
Boston Woven Hose & Rubber Co	5	Gummi-Zeltung.	56	New York Zinc Co.	38	Voorhees Rubber Mfg. Co.	6	
Bowers Rubber Works.	12	Gutta Percha & Rubber Mfg. Co	60	New York Belting & Packing Co		W		
Bridge, David & Co.	27	Gutta Percha & Rubber Mfg. Co.,	59	New York Rubber Co.	38	Wanted and For Sale.	28	
Brixey, W. B.	37	Toronto.	59	Norton & Co., M.	36	Western Rubber Works.	10	
Broomfield, P. & Co.	37	H		Norton, E. F.	35	Western Specialty Mfg.	8	
Buffalo Foundry & Machine Co.	41	Hagemeyer & Brunn.	36	O		Westmoreland Rubber Mfg. Co.	39	
Buffalo Rubber Mfg. Co.	35	Halsted, Pennington.	15	Oxford Tripoli Co.	26	Wetherill Co., S. P.	25	
		Hirsch & Co., A.	2			White, T. & S. C., Co.	35	
C		Hodgman Rubber Co.	6	P		Williams Foundry & Machine Co.	35	
Cabot, Samuel, Inc.	1	Hofeller & Co., Theodore.	387	Parker, Stearns & Co.	24	Williams & Bros., J. P.	24	
Canadian Rubber Co., of Montreal	2	Hoggson & Pettis Mfg. Co.	34	Peerless Rubber Mfg. Co.	18	Wing & Co., C. S.	36	
Canfield Co., H. O.	56	Home Rubber Co.	60	Pequanoc Rubber Co.	13	Wirt & Knox Mfg. Co.	13	
Canton Rubber Co.	24	Hood Rubber Co.	60	Perrin, Wm. R., & Co.	27	Wolpert, M. J.	21	
Cantor, Joseph.	29	Huron Rubber Co.	60	Philadelphia Rubber Works.	30			
Carter Bell Mfg. Co.	26			Picher Lead Co.	21	Y		
Challamel, Augustin.	26	I		Pirelli & Co.	31	terdon, William.	34	
Chicago Rubber Works.	20	India Rubber Pub. Co.	1	Plymouth Rubber Co.	10	Z		
Cincinnati Rubber Mfg. Co.	9	The Indiana Rubber & Ins. Wire	27	Post, Charles Johnson.	10	Zacks & Son, B. A.	33	
Clapp Rubber Co., E. H.	57	Co.	23					
Coleman Co., W. C.	42	J		R				
Cleveland Rubber Works.	28	Jenkins Bros.	10	Raven Mining Co.	43			
Coleman Co., W. C.	28	Johnston, August.	27	Republic Rubber Co.	16			
Continental Caoutchouc & Gutta		"Journal d'Agriculture Tropi-	59	Revere Rubber Co.	58			
Percha Co.	13	cale"	36					
Continental Rubber Co.	44	K						
Continental Rubber Works.	32	Kaufman, M.	36					
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B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hodgman Rubber Co., New York.
Gustave Kush, New York.
Revere Rubber Co., Boston-New York.
Voorhees Mfg. Co., Jersey City.

Brushes.

Boston Woven Hose & Rubber Co.
C. J. Bailey & Co., Boston.
Springfield Tire & Rubber Co., Springfield, Ohio.

Buffers.

Boston Belting Co., Boston-New York.
Canadian Rubber Co., of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.

Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Card Cloths.

Canadian Rubber Co., of Montreal.
Mechanical Fabric Co., Providence, R. I.

Carriage Mats.

Continental Rubber Works, Erie, Pa.
Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

RUBBER BUYERS' DIRECTORY—Continued.

Carriage Mats—Continued.

Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Cord (Pure Rubber).

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Davol Rubber Co., Providence, R. I.
Dayton Rubber Mfg. Co., Dayton, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Deckle Straps.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Force Cups.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Hodgman Rubber Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.

Fruit Jar Rings.

Acme Rubber Mfg. Co., Trenton.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Rubber Products Co., Barborton, O.
New York Belting & Packing Co., N. Y.

Fuller Balls.

Continental Rubber Works, Erie, Pa.
A. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Rubber Products Co., Barborton, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.

Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Boston Belting Co., Boston—New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New Jersey Car Spring & Rubber Co.
Rever Rubber Co., Boston—New York.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Dayton Rubber Mfg. Co., Dayton, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Rever Rubber Co., Boston—New York.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Wire Wound.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crute Co., Sharon Center, O.

Hose Pipes, Nozzles, Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Mfg. Co., New York.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Hose Linings.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.

Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
New York Belting & Packing Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

Cotton and Linen.
Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Mfg. Co., New York.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
A. Schrader's Son, Inc., New York.

Hose Bands, Straps & Menders.

Boston Woven Hose & Rubber Co.
William Yerdon, Fort Plain, N. Y.

Lawn-Hose Supporters.

C. J. Bailey & Co., Boston.

Lawn Sprinklers.

W. D. Allen Mfg. Co., Chicago.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.

Mould Work.

(See Mechanical Rubber Goods.)
Atlantic Rubber Co., Hyde Park, Mass.
H. O. Canfield Co., Bridgeport, Ct.
Canton Rubber Co., Canton, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Oil Well Supplies.

Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.

Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Packing.

(See Mechanical Rubber Goods.)
B. & G. Rubber Co., Erie, Pa.
Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.

Paper Machine Rollers.

Boston Belting Co., Boston—New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Pump Valves.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.
Massachusetts Chemical Co., Walpole, Mass.

Rolls—Rubber Covered.

Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Sewing Machine Rubbers.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.

RUBBER BUYERS' DIRECTORY—Continued.

Stair Treads—Continued.

National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston—New York.

Tiling.

Canadian Rubber Co., of Montreal, Ltd.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring and Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.

(See Mechanical Rubber Goods.)
American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Mattson Rubber Co., Lond., N. J.
Plymouth Rubber Co., Stoughton, Mass.
Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lond., N. J.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lond., N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Valves.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York—Chicago.
Mattson Rubber Co., Lond., N. J.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lond., N. J.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES.

Atomizers.

Bandages.

Bulbs.

Nipples.

Syringes.

Water Bottles.

Druggists' Sundries, Generally.

American Hard Rubber Co., New York
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Huron Rubber Co., Cleveland, O.
L. & M. Rubber Works, Carrollton, Ohio.
Luzerne Rubber Co., Trenton, N. J.
National India Rubber Co., Bristol, R. I.
Parker, Stearns & Co., N. Y.
Pirelli & Co., Milan, Italy.
Rubber Products Co., Barborton, O.
Seamless Rubber Co., New Haven, Ct.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.
Western Specialty Mfg. Co., N. Y.

Balls, Dolls and Toys.

New York Rubber Co., New York.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York—Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Finger Cots.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Faultless Rubber Mfg. Co., Akron, O.
Huron Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
L. & M. Rubber Works, Carrollton, O.
The Rubber Products Co., Barborton, O.

Gloves.

Canadian Rubber Co., of Montreal.
Canton Rubber Co., Canton, O.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
L. & M. Rubber Works, Carrollton, O.
National India Rubber Co., Bristol, R. I.
Rubber Products Co., Barborton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co., of Montreal.
Davidson Rubber Co., Boston.
H. O. Canfield Co., Bridgeport, Ct.
Daval Rubber Co., Providence, R. I.
Luzerne Rubber Co., Trenton, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Atlantic Rubber Co., Hyde Park, Mass.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
L. & M. Rubber Works, Carrollton, O.
National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
L. & M. Rubber Works, Carrollton, O.
A. Schrader's Son, Inc., New York.

Shower Bath Sprinklers.

A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, O.
N. Tire Rubber Sponge Co., Chicago.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York—Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stoppies (Rubber).

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Erie Rubber Works, Erie, Pa.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
A. Schrader's Son, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
L. & M. Rubber Works, Carrollton, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co., of Montreal.
Davidson Rubber Co., Boston.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS.

Air Goods (Rubber).

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Providence.
Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co., of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Atlantic Rubber Co., Hyde Park, Mass.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Rubber Products Co., Barborton, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.

Calendering.

Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Acme Rubber Mfg. Co., Trenton, N. J.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Gutta Percha & Rubber Mfg. Co., Toronto.

National India Rubber Co., Bristol, R. I.

Clothing.

Atlantic Rubber Co., Hyde Park, Mass.
Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Gutta Percha & Rubber Mfg. Co., of Toronto.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son, Inc., New York.
Hodgman Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

(See Clothing.)

Proofing.

Canadian Rubber Co., of Montreal.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.
Rubber Coated Cloths.
Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR.

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Boston Rubber Shoe Co., Boston.
Canadian Rubber Co., of Montreal.
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., of Toronto.
Hood Rubber Co., Boston.
Lycorning Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Atlantic Rubber Co., Hyde Park, Mass.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Continental Caoutchouc & Gutta-percha Co., Hanover.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Tire & Rubber Co., Springfield, Ohio.
Western Rubber Works, Goshen, Ind.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co., of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER.

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., Lond., N. J.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

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Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mattson Rubber Co., Lond., N. J.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston—New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co., of Montreal.
Luzerne Rubber Co., Trenton, N. J.
Joseph Stokes Rubber Co., Trenton, N. J.

RUBBER BUYERS' DIRECTORY—Continued.

Insulating Compounds.

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Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

Acme Rubber Mfg. Co., Trenton, N. J.
W. R. Brixey, New York.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
National India Rubber Co., Providence.

Insulated Wire Waxes.

American Wax Co., Boston.

Splicing Compounds.

Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Walpole, Mass.

SPORTING GOODS.**Foot Balls.**

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.

Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Rubber Products Co., Barborton, O.

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Hodgman Rubber Co., New York.
A. Schrader's Sons, Inc., New York.

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A. Schrader's Sons, Inc., New York.

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Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

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Maywald, F. J., New York.
Stephen P. Sharples, Boston, Mass.

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Adamson, C. F., Akron, O.
Akron Rubber Engineering Co., Akron, O.
M. P. Fillingham, New York.

Contracting Engineer.

August Johnston, New York.

Planting.

Tuma River Plan. Co., New York.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.
L'Agriculture des Pays Chauds, France.

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda, Ceylon.

Tapping Tools.

G. Van den Kerckhove, Brussels, Belgium.

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Birmingham Iron Foundry, Derby, Conn.

Belt Folding Machines.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Slitters.**Cloth Dryers.****Gearing.****Shafting.****Wrapping Machines.**

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Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Stretchers.

Birmingham Iron Foundry, Derby, Conn.
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Hogson & Pettis Mfg. Co., New Haven.

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New England Butt Co., Providence, R. I.

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Textile-Finishing Machinery Co., Providence, R. I.

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Chucks (Lathes).

Hogson & Pettis Mfg. Co., New Haven.

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American Tool & Machine Co., Boston.

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Farrel Foundry & Mach. Co., Ansonia, Conn.

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Birmingham Iron Foundry, Derby, Conn.

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Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.

Dies.

Boston Die Co., Boston.
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Buffalo Foundry & Machine Co., Buffalo, N. Y.
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Farrel Foundry & Mach. Co., Ansonia, Conn.

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Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

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Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

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John Royle & Sons, Paterson, N. J.

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Middlesex Last Co., Boston.

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A. Adamson, Akron, O.

Lathes—Jar Ring.

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Birmingham Iron Foundry, Derby, Conn.
William R. Thropp, Trenton, N. J.

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Williams Foundry & Machine Co., Akron, Ohio.

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Farrel Foundry & Mach. Co., Ansonia, Conn.

Presses (for Rubber Work).

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Boomer & Boechert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Perrin & Co., Chicago Ill.
William R. Thropp, Trenton, N. J.
Williams Foundry & Machine Co., Akron, Ohio.

Pumps.

Birmingham Iron Foundry, Derby, Conn.
Boomer & Boechert Press Co., Syracuse, N. Y.
Farrel Foundry & Mach. Co., Ansonia, Conn.

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Mason Regulator Co., Boston.

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Hogson & Pettis Mfg. Co., New Haven.

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Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

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Hogson & Pettis Mfg. Co., New Haven.

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Hogson & Pettis Mfg. Co., New Haven.

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Williams Foundry & Machine Co., Akron, Ohio.

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Buffalo Foundry & Machine Co., Buffalo, N. Y.
Joseph P. Devine Co., Buffalo, N. Y.

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Birmingham Iron Foundry, Derby, Conn.

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Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, M. P. Fillingham, New York.
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William R. Thropp, Trenton, N. J.

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David Bridge & Co., Castleton, Manchester, Eng.
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William R. Thropp, Trenton, N. J.

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M. Norton & Co., Charlestown, Mass.

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Aluminum Flake Co., Akron, O.

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Actien-Ges. Georg Eggenhoff's Salzwerke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.
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Golden and Crimson.

Joseph Cantor, New York.
Golden and Crimson.
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Avery Chemical Co., Boston.

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Avery Chemical Co., Boston.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

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Joseph Cantor, New York.
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Carbon Bisulphide.

George W. Speaight, New York.

Chemicals.

Massachusetts Talc Co., Boston.
Oxford Tripoli Co., New York.
George W. Speaight, New York.
S. P. Wetherill Co., Philadelphia, Pa.

Colors.

Joseph Cantor, New York.
William H. Scheel, New York.
Type & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

Crude Rubber.

George A. Alden & Co., Boston.
W. C. Coleman Co., Boston.
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Insulated Wires.
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National India Rubber Co., Bristol, R. I.

Mats, Automobile.
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Revere Rubber Co., Boston, Mass.

Repair Stock.
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Rims, Wheel.
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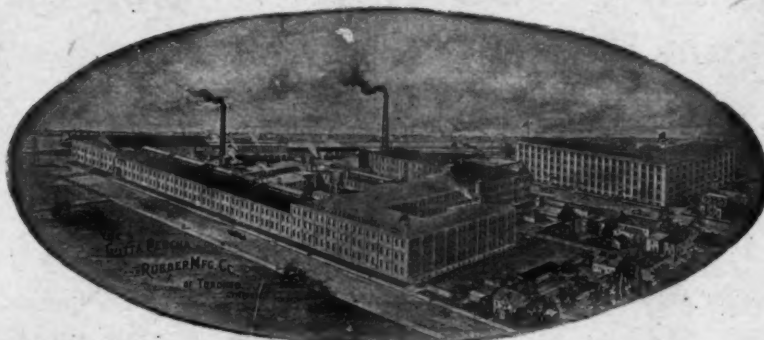
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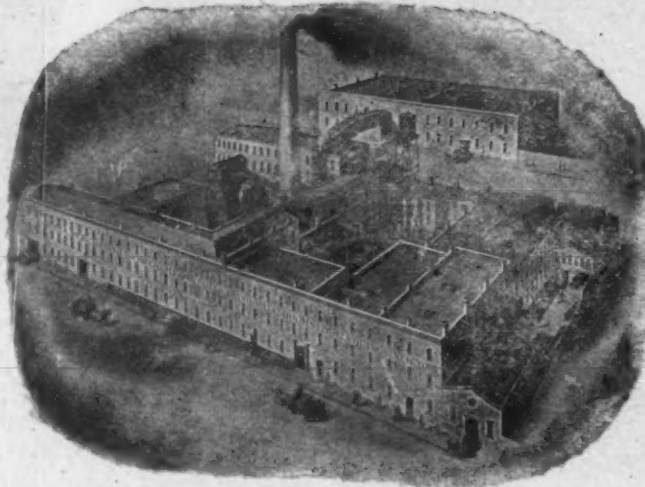
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